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THE EDUCATIONAL NUMBER
of THE CHEMIST AND DRUGGIST will be published on Saturday, August 10. Place advertisements with the Publisher early.

Summary.

THE DENTAL COMPANY CASE in Dublin was really a win for the companies. The injunction was only as regards an individual (p. 111).

A GLASGOW unregistered chemist who has been carrying on business for twenty-two years has just been discovered by the Pharmaceutical Society and fined (p. 112).

WE complete our notes on Manchester pharmacy with an illustrated account of Mancunian manufacturing-chemists and wholesale druggists and their establishments (p. 134).

OUR CORRESPONDENT IN JAPAN sends us the latest information in regard to incidents in Japanese pharmacy for the purpose of importing drugs, chemicals, and medicine which will not be enforced until January 1, 1908 (p. 164).

MR. DANIEL DAVISON, of Cromer, who has on several occasions written for us articles on his favourite hobby mortar-collecting, now has the largest collection in the world, and describes a number of the more interesting mortars not hitherto described (p. 155).

MR. WALTER HILLS, as chairman of the Committee of Reference on Pharmacy for the General Medical Council, has issued a circular letter asking for analyses of prescriptions in order to ascertain what should be excluded from, or added to, the next British Pharmacopœia (p. 115).

THE IMPORTATION OF PROPRIETARY ARTICLES into Germany is hedged round with many difficulties, of which British exporters are no doubt aware. We now give full explanation in an article, which is timely in view of the fact that at an early date the German Government expects to deal further with the matter (p. 117).

TRADE INFORMATION bulks largely in this number. We call special attention to the notes on our Summer Supplements (beginning on p. 118). Also to the observations of our town traveller in regard to the present state of trade and the new things which are obtainable from trade houses, as well as numerous notes on novelties which begin on p. 121.

THE feature in the markets is the continued advance in opium, followed by again higher prices for morphine salts and codeine and salts. English refined camphor is lower, quinine, mandrake and senega are firmer, gentian, lemon-grass, and citronella oils are easier, and camphor oil, antimony, and copper sulphate are lower (p. 196).

THE BRITISH PHARMACEUTICAL CONFERENCE met in Manchester this week under the presidency of Mr. Thomas Tyrer. Favourable reports of the condition of the Conference were submitted by the executive and treasurer, and after Mr. Tyrer's address the reading of papers was commenced, many of these being in advance of the average standard. They are all summarised in our editorial notes, and those who want to read fuller reports at their leisure (it begins on p. 166) should refer to these notes, beginning on p. 128. It was decided to meet in Aberdeen next year under the presidency of Mr. Robert Wright, of Buxton. The social events of the meeting are described at the end of the report.

IN AN APPRECIATION of Mr. Thomas Tyrer, this year's president of the British Pharmaceutical Conference, the chief events of his career as a technical chemist are recorded (p. 141), and this is followed by the Presidential Address, which he delivered to the Pharmaceutical Conference on July 23. In this address Mr. Tyrer urged upon members of the Conference the necessity for a better "Year-book of Pharmacy," and thereafter, in reply to the question "What is research?" quoted the opinions of many leaders in science, such as Lord Kelvin, Sir William Ramsay, Dr. Thorpe, Dr. Mond, and Professor Armstrong, the whole being intended to show that British chemists well maintain the reputation of the country in chemical research (p. 143).

Corner for Students.

Conducted by Leonard Dobbin, Ph.D.

SUMMER STUDIES.

The exercises in qualitative analysis are suspended during July and August, and will be resumed in September, all who are preparing for qualification in chemistry and pharmacy being eligible to compete. For summer studies we shall deal with a series of topics directly bearing upon the pharmaceutical examinations.

Indicators.

By Walter S. Clark, Ph.C., A.C.G.I.

In the previous article indicators used in acidimetry and alkalinimetry were considered generally. In the present one the characteristics of these are dealt with.

Methyl Orange.—This substance is the sodium or ammonium salt of a derivative of benzene-sulphonic acid (dimethyl-amido-azo-benzene-sulphonic acid). It is very soluble in water, forming an orange-red solution. The free acid forms a distinct reddish solution. Hence, on the addition of a suitable acid to a solution of methyl orange, the colour changes from orange red to a distinct red colour. The acid of which methyl orange is a salt is a fairly strong one. It is, however, completely displaced by the mineral acids (hydrochloric, sulphuric, etc.). Organic acids, such as oxalic, acetic, citric, etc., are not strong enough to decompose the salt completely, and hence this indicator must not be used for the titration of such acids, since the end-point is necessarily uncertain. The weaker acids, carbonic, boric, hydrocyanic, do not affect the indicator at all. Thus a carbonate may be titrated, using methyl orange as an indicator, without the necessity of boiling the liquid to remove the liberated carbonic acid, as in the case of litmus or phenolphthalein. Again, in the B.P. tests for borax, the student will observe that a solution of borax is titrated with standard sulphuric acid. The reaction which takes place may be expressed thus :

$$Na_2B_4O_7 10H_2O + H_2SO_4 \ggg\!\!\rightarrow Na_2SO_4 + 4H_3BO_3 + 5H_2O.$$

Since boric acid has no action on methyl orange, the latter is used to indicate the end of the reaction. Litmus could not be used here, as boric acid acts on this indicator to some extent, and the end-point would not be sufficiently sharp. Methyl orange must not be used in the presence of nitrous acid or nitrites, as these substances interact with it. Commercial nitric acid frequently contains some nitrous acid, hence use litmus solution in the titration of nitric acid by standard alkali. It is an excellent indicator for use with ammonia and its salts. Do not use too much of the reagent, as the end-point is more distinct with a small quantity. In making duplicate titrations use the same amount of indicator for each. Summarising, then, we may say—

1. Methyl orange may be employed in the presence of carbon dioxide.
2. It must not be used for organic acids, or in the presence of nitrous acid or its salts.

Phenolphthalein.—This substance occurs in small yellowish-white crystals, and is insoluble in water, being of a resinous nature. It is quite soluble in 50-per-cent. alcohol, forming a colourless solution. It is the anhydride of a very weak acid which forms deeply coloured alkaline salts. Hence phenolphthalein is colourless in the presence of excess of acid and purple in the presence of excess of alkali. The alkali-metal salts of phenolphthalein are easily decomposed by weak organic acids and also by carbonic acid. Hence this indicator is particularly useful in titrating all varieties of organic acids—*e.g.*, citric, tartaric, acetic, oxalic, etc. Like litmus solution, however, it cannot be used to titrate carbonates by standard acid unless the carbon dioxide is displaced by boiling the solution. It must not be used in the titration of free ammonia or in the presence of ammonium salts. Note that excess of concentrated alkali decolourises the mixture of a dilute solution of alkali and phenolphthalein. The colour is restored on dilution with water. Phenolphthalein reacts perfectly in alcoholic solution, and hence may be used for the titration of organic acids insoluble in water, but soluble in alcohol. A mixture of phenolphthalein and methyl orange is sometimes used as a "neutrality" indicator. The neutral point is shown by a lemon colour. The slightest excess of acid shows a pink colour (methyl orange), while excess of alkali gives a bright red (phenolphthalein). Phenolphthalein gives no colour with alkali-metal bicarbonates, and hence may be used to distinguish between, say, sodium carbonate (purplish pink) and sodium bicarbonate (no colour). With regard to this indicator, remember that—

1. It is the best indicator for use with organic acids.
2. It cannot be used in the presence of ammonia or its salts.
3. If carbonates are estimated by its aid, the liberated carbon dioxide must be removed by boiling.

Litmus.—The true colouring-agent of litmus is a substance called azolithmin. It appears to have the characters of a weak acid, the salts of which are blue and the acid itself pink. Litmus is most sensitive when it is of a purple colour. Free alkali then produces a pure blue tint, while free acid gives a bright-red tint. The acid of litmus is not a very strong one, being probably intermediate in this respect between that of methyl orange and that of phenolphthalein. It is displaced by carbonic acid, hence when carbonates are titrated, using litmus as an indicator, the solution must be boiled. The reaction is complete when the solution becomes bright red, which colour does not change when the solution is boiled. Ammonium salts do not interfere with this indicator, as in the case of phenolphthalein. It may be used for all the mineral acids, and for one or two of the organic acids. Thus oxalic acid may be titrated by its aid, and the same is true of lactic and tartaric acids. With these acids it gives a fairly sharp end-point. Generally speaking, however, phenolphthalein is the best indicator to use with organic acids. Remember, then—

1. That litmus is affected by carbonic acid.
2. That its use with organic acids is limited.
3. That it is not affected by ammonia or its salts.

Cochineal.—*Tinctura cocci* forms a convenient solution for use in volumetric analysis. Carminic acid is the colour-principle, but the tincture contains other substances in addition, and therefore behaves somewhat differently from the pure acid. Since the colour-principle is an acid, the yellowish-red colour of the tincture is unaffected by mineral acids, although a slight precipitate is produced. Alkalies, however, change the colour to violet. Carminic acid is a stronger acid than that of litmus, but is weaker than that of methyl orange. This indicator is therefore slightly affected by carbonic acid, but for ordinary purposes the effect is negligible. It cannot be used in the presence of even traces of iron or alumina compounds or acetates. The B.P. recommends it for use in titrations of ammonia by acids.

Turmeric.—This indicator is best used in the form of paper. An alcoholic tincture is prepared by macerating the powder in a warm place. This solution contains the colouring-principle curcumin, which is supposed to be of an acid nature. Blotting-paper is soaked in the tincture, and then dried and cut up. These strips are unaffected by acids, since curcumin is an acid (?), but alkalies turn them a deep chocolate-brown. In the above classification of indicators, notice that turmeric is placed alongside of phenolphthalein. Hence, generally speaking, turmeric is available for those reactions for which phenolphthalein may be used. Turmeric paper (or solution) is turned to a deep red by boric acid, a colour distinct from that produced by alkalies. This red colour is changed to green or purple by caustic alkalies.

The next article will deal with indicators used in other volumetric determinations.

Information Wanted.

Inquiries for the names and addresses of manufacturers, or other trade information, not traceable by reference to the advertisement-pages of "The Chemist and Druggist" and the "C. & D. Diary," or not filed in our private register, are inserted here free of charge. Postcard or other replies to any of the subjoined inquiries (addressed to the Editor "The Chemist and Druggist," 42 Cannon Street, London, E.C.) will be esteemed.

24/7. Present address of makers of hopogan?

199/59. Makers of imitation old silver metal boot polish outfit boxes, with embossed design.

English News.

Local Newspapers containing marked items of news interesting to the Trade are always welcomed by the Editor.

Brevities.

On Rhyl sands this summer is a clever troupe of entertainers led by an artist who spends the rest of the year in his pharmacy.

The premises of Mr. J. J. Rainey, chemist and druggist, Spilsby, were burglariously entered last week, and 2*l.* and some cigars stolen.

The staff of Messrs. Howards & Sons, Ltd., Stratford, have formed a swimming club with headquarters at Jupp Road Swimming Baths.

Messrs. Francis & Co., chemists and druggists, Manchester Road, Burnley, had a small fire in their place last week. Cause: Turpentine on the stove.

Last week the branch shop of Messrs. Boots, Ltd., chemists, Alexandra Road, Moss Side, Manchester, was broken into and about 20*l.* of cash stolen from the safe, besides goods.

The Bloxwich fire-brigade spent three hours last week in putting out a fire in the chemist's shop carried on by Mr. Belcher, High Street, there. It had been caused by naphthalin igniting.

At the Liverpool Assizes last week Eli Jackson, a herbalist of Preston, and his wife, were found guilty of procuring abortion by means of instruments and pills. Jackson got five years' penal servitude and his wife three years'.

At Leeds Assizes on July 19 William Frederick Laycock, described as a chemist of Leeds, was the defendant in an action for libel instituted by Philip Gliff, glass stainer, with whom he was a sleeping partner. The jury found for the plaintiff with 25*l.* damages.

Elizabeth Lord and Bertha Sheldon, employées of Camwal, Ltd., at Ardwick Works, Manchester, were fined 2*s.* 6*d.* each, and costs, on Friday, July 19, for not using gauntlets and masks while engaged in the syphon-filling department. The local factory-inspector prosecuted.

Mr. R. Robinson, dispenser to Messrs. McClew, Depree & Hardwicke, of Leek, was instrumental in saving the life of James Hill (23), in a boating accident by which two Leek men were drowned. Mr. Robinson, who was near the scene of the accident at the time, applied Sylvester's method of artificial respiration to the body of Hill, and this proved successful.

Mr. Robert Keogh, who keeps a chemist's shop in Everton Road, Liverpool, was one of the witnesses against a labourer named March, who was found guilty at the Liverpool Assizes last week for attempting to murder his son by administering poison. It may be remembered that the prisoner asked Mr. Keogh for sugar of lead, and he, being suspicious, supplied him with chloride of ammonia. Mr. Keogh is not in the list of registered chemists and druggists.

Motor-spirit.

The Motor Union of Great Britain and Ireland, at a meeting held in Southampton last Saturday, predicted a famine of petrol in the near future, and its Fuels Committee suggested that alcohol is the most likely inexhaustible substitute. They recommended:

(*a*) That steps be taken to remove the restrictions on alcohol.

(*b*) That a prize be offered for the best essay on alcohol as a fuel.

(*c*) That trials be held to test the comparative merits of alcohol and petrol.

A standing committee was appointed to give effect to these and other recommendations.

Contracts.

The Birmingham Rural District Council have accepted the tenders of Walker & Harris, chemists and druggists, Canterbury, and the Sanitary Dry Lime Co., for the supply of disinfectants.

The Metropolitan Asylums Board has accepted the following tenders for the annual supply of drugs, druggists' sundries, and surgical dressings: *Drugs*, Burgoyne, Burbidges & Co., Coleman Street, E.C.; *druggists' sundries*, Hospitals and General Contracts Co., Ltd., Mortimer Street, W.; *surgical dressings*, Hospitals and General Contracts Co., Ltd. (eleven items, estimated value of contract 750*l.*); A. Berliner, Worship Street, E.C. (three items, 40*l.*); Cuxson, Gerrard & Co., Birmingham (two items, 10*l.*); B. Pratt & Co., Wood Street, Cheapside (one item, 360*l.*). It was reported in the case of drugs and druggists' sundries it was impracticable to state the value of the contracts, as no reliable estimate of the probable quantities required could be formed. In each case the tender accepted was the lowest received. In reply to a member of the Board, the Chairman of the Contract Committee (Mr. W. J. B. Graham) said that the drug-tenders varied from 12 to 35 per cent. off the lists of schedule prices, and the latter was accepted.

The Essex Education Committee has accepted the tender of Messrs. Spencer, Heath & George, Ltd., to supply chemicals and apparatus for the laboratory at Maldon School, the amount being 142*l.* 3*s.* 11*d.*

"Leonard de Bayer" Sentenced.

Sentence was passed at the Liverpool Assizes on July 18 on Leonard de Bayer, alias de Blowitz (aged thirty-seven), who pleaded guilty to obtaining 21*l.* by false pretences in April last from Mr. D. A. Nightingale, the Liverpool representative of Messrs. Parke, Davis & Co. De Bayer had represented himself as the son or relative of the head of the well-known Elberfeld firm, and induced Mr. Nightingale to give up his appointment in order to take up the sole agency for the Bayer Co. in the United Kingdom, and subsequently got the 21*l.* Evidence was subsequently forthcoming that the man was in no way connected with the Bayer Co., nor was he a relative of the head of that firm, and it was ascertained that he had defrauded several doctors and others who had been charmed by his address. De Bayer admitted in court that he had served a term of penal servitude for misconduct. He was out on ticket of leave. He had told the police authorities that he would be arrested in Germany for not serving his military training, and asked the police to certify that he was in prison and could not. The police helped him, and the Discharged Prisoners' Aid Society paid his fare to Hamburg. Prisoner explained that he went to the University of Berlin, but they could not trace him there; he told them he was a registered doctor in Paris, but they could not find that that was correct; and he further said that he had had a place in London, but the police could find no truth in that either. They were informed in London that he was an expert Continental swindler. He had been married, but was divorced. De Bayer was now sentenced to twelve months' hard labour. In addition, it was recommended, at the end of that time, under the powers of the Aliens Act, he should be expelled from this country.

Midland Notes.

Messrs. P. Harris & Co. have extended their window-surface by taking into it the side passage, which has now become part of the work-a-day space.

What is ung. sulph. camph.? A prescription for it has been going the round in Birmingham. It is prescribed by a London man and has in parentheses "Ext. Ph.," but does not appear in Martindale's book.

The Broad Street Corner Improvement Scheme is proving a good advertisement for Messrs. Bellamy & Wakefield, whose name and establishment have been over and over again referred to in the debate. The scheme was rejected a second time last week.

It is stated Mr. A. W. Southall, of Messrs. Southall Brothers & Barclay, Ltd., has been elected President of the Midland Pharmaceutical Association. He is the son of Mr. Alfred Southall, Councillor of the Pharmaceutical Society, and has a large knowledge of men and things pharmaceutical. The other officers were re-elected.

Those pharmacists of Burton-on-Trent who cater for veterinary practice had a good look in this last week when the Staffordshire Agricultural Society held a very successful show there. There was a good display of honey and beeswax, which, by the way, owing to climatic causes, will be dearer this season, very few bees being about.

Colonel and Mrs. Wyley have entertained the employés of Messrs. Wyleys, Ltd., at the Charter House. The visitors greatly enjoyed the hospitality afforded, and spent a very pleasant time in the delightful surroundings of the residence. The feature of the day was the presentation to Mr. R. H. Merrett of a handsome silver rose-bowl by Colonel Wyley and a walking-stick by the staff and employés, both as an expression of good-will and kindly feeling on his retirement after representing the firm for twenty years.

East Anglian Notes.

Mr. E. A. Atmore, chemist, King's Lynn, takes an active part in musical matters, and has recently been elected on the committee of the resuscitated Lynn Musical Society.

Mr. Wm. J. Palmer, pharmaceutical chemist, King's Lynn, has contributed to the "Lynn Advertiser" a letter containing valuable hints on the preparation of sheep's wool in a marketable condition.

Up to the present, July has been a most disappointing month for the seaside pharmacists. Visitors are not as yet too plentiful, and August must turn out far above the average to save the 1907 season from being a poor one.

Large premises at the corner of Beach and Pallister Road, Clacton-on-Sea, have recently undergone considerable improvements and are destined to become a pharmacy. A new front with fine windows has been completed, and, though the season is now in full swing, some weeks must elapse before the opening day.

An exciting circumstance, which happily ended without serious consequences, occurred in a Clacton pharmacy about 7 P.M. on Saturday evening last. A conjurer, who was performing at one of the music halls, entered with an 8 oz. glass-stoppered w.m. bottle containing several ounces of metallic potassium in a dry state. He requested that benzine or naphtha should be added. Some discussion occurred as to the most suitable liquid, the chemist remarking on the large quantity of potassium. Placing the bottle on one of the brass scale pans the chemist added the naphtha, but no sooner was this done than flames shot up towards the ceiling, and considerable consternation occurred among the customers in the pharmacy. With great presence of mind the proprietor removed the scale and blazing mass to the footpath outside, where some of the wise men among the crowd suggested a few buckets of water.

Cricket.

Wholesale Chemists and Druggists' Championship.—A league match was played at Brockley on July 13 between Davy Hill C.C. and May & Baker C.C. Davy Hill C.C. scored 89 and May & Baker 80. Mr. E. Sibley, for Davy Hill C.C., did the hat trick.

Barronetta played May & Baker's eleven on the ground of the former at Wormholt Farm on July 20. The game resulted in an easy win for May & Baker. Scores: May & Baker, 64; Barronetta, 11. Colby bowled well for Barronetta, taking seven wickets for 17 runs.

Davy Hill and Hodgkinson C.C. *v.* Baiss Bros. and Stevenson.—Played at Crofton Park on July 20. The scores were: D. H. & H., 92; B. B. & S., 46. For the winners Farr scored 20, Watkins 28, and Reynolds 21, Farr also taking eight wickets. Adle made the top score (15) for the losers, and Sheppard bowled finely, securing six wickets for 11 runs.

On July 18 a party of sixteen members of the Sheffield Chemists' Association had an enjoyable outing with their colleagues of the Leeds Association at Moortown, Leeds, where a cricket match was played, after which Mr. W. P. Bowman (Vice-President of the Leeds Association) entertained the party to tea at the mansion in Roundhay Park. Mr. Crawford rendered some excellent songs, and among the proposers and responders of toasts, etc., were Mr. W. P. Bowman, Mr. Beacock, Mr. F. Pilkington Sargeant, and Mr. J. R. Bentley, of Leeds, and Messrs. Jackson, C. H. Twelves, H. G. Williams, and Campbell, of Sheffield. The cricket match ended in a draw, the Leeds chemists scoring 104, while Sheffield made 53 for eight wickets.

Dispensing in Marylebone.

At the meeting of the Marylebone Board of Guardians on July 22 the Dispensing and Vaccination Committee recommended that during the annual leave of the dispenser at the North Dispensary Mr. E. T. A. Smith, L.S.A., be engaged as *locum tenens* at a salary of 2*l*. 10*s*. per week for three weeks. Mr. H. A. Dunn said that the returns showed that the average number of prescriptions which the dispenser (Mr. Smith) made up was nine per day, and for this work he was paid at the rate of 140*l*. per annum. While personally he would do nothing detrimental to the officer, as an employer of labour he would not like to pay 140*l*. a year, plus the cost of drugs, for this amount of work. He suggested that the prescriptions might be compounded outside during the vacation of the dispenser. The Chairman: We have no power to do anything of the kind. There is an Order of the Local Government Board that we must have this dispensary, and unless they consent to an alteration we can do nothing. Mr. G. Fowler, chairman of the committee, considered that alterations at the dispensary at the present time would be absolutely ill-advised. Mr. F. Morris suggested that they might point out to the Local Government Board the small amount of work at this dispensary, and suggest an alternative plan. The Chairman said that if any change was made they would have to compensate the dispenser. It seemed to him that there had not been a great deal of work to be done at the dispensary. Mr. Fowler: Of course, the work has not been as heavy as it used to be; but the dispenser has to perform other duties besides compounding. He has to analyse substances for the medical officer and keep a register. The dispenser is a very satisfactory officer, worked a fairly long day, and he did not think that they ought to go experimenting with him. After further discussion Mr. T. Fudling moved that the remuneration of the *locum tenens* be at the rate of 2*l*. per week. Mrs. V. M. Crawford seconded, and the amendment was adopted by a large majority.

Hartlepool Outing.

The members of the Hartlepools Chemists' Association, with their lady friends, had an enjoyable excursion to Ripon on Wednesday, July 17, business being suspended at 11 A.M. for the purpose. They travelled by saloon train, and after dining at the Unicorn Hotel, Mr. Bulmer Rudd, Secretary of the Ripon Chemists' Association, guided them over the Cathedral and other interesting places. Then they motored to Studley Royal, and when they returned to Ripon Mr. Rudd photographed the party, which we reproduce:

Beginning from the top left-hand corner of the photo the names of the individuals are as follows: Alderman Clarkson, J.P., President, Messrs. Cross, Ferry, Barker, sen., J. B. Barker, jun., Pattison, Grosh, and Henderson. Mr. Denton, sen., Mr. Gibson, Miss Cross, Mrs. Gamlen, Mrs. Gibson, Mrs. Timmins, and Mr. Denton, jun. Mr. King, Mr. Gamlen (hon. secretary), Mrs. Ferry, Master Timmins, Mr. Timmins, Miss Timmins, and Mr. Grosh, sen.

On the journey home a vote of thanks was moved by Alderman Clarkson, J.P., for the able manner in which the Secretary had carried out all the arrangements.

Newcastle-on-Tyne Chemists' Association.

The annual excursion of the Association in conjunction with the Sunderland Pharmaceutical Association took place on Wednesday, July 17, at Seaton Delaval. The number of members and friends present was 72—a record. The members of the Newcastle contingent either went by train to Hartley or cycled, then walked down Seaton Delaval Avenue to the Melton Constable Hotel, Seaton Sluice (a fine old seaside village), for refreshments. The Sunderland section travelled by train to South Shields, crossed by Ferry to North Shields, and drove to Seaton Sluice, joining the Newcastle section there. In the grounds of the Hall a cricket match between Bedlington and Seaton Delaval was in operation, and was viewed by some of the party, others enjoying the sea breeze on the beach. A substantial tea was served in the hotel, after which a tug-of-war between Newcastle and Sunderland took place, the Tynesiders succumbing to the muscle of the Wearsiders. A fog from the sea then set in, which was responsible, along with the lateness of the day, seven o'clock, for diminishing the numbers who stood for the photographic group which is reproduced above. Altogether a most enjoyable day was spent. Messrs. Gilderdale and Walton, the respective presidents, made short speeches.

Irish News.

Local Newspapers containing marked items of news interesting to the Trade are always welcomed by the Editor.

Personal.

The Lord Chancellor has appointed Mr. Arthur H. Jones, pharmaceutical chemist, of Doneraile, a commissioner for taking oaths for the county of Cork.

Professor Letts, the head of the chemistry department at Queen's College, Belfast, was again examined last week at the Health Commission in Belfast, and gave interesting evidence as to experiments he made in connection with the *Ulva latissima* which causes the foreshore nuisance in the loch.

Scotch News.

Local Newspapers containing marked items of news interesting to the Trade are always welcomed by the Editor.

Personal.

In the class examinations of Edinburgh University Mr. Leonard S. Willox, Ph.C., has passed with high distinction in histology and practical anatomy, and has also taken distinction, with third place, in his class of clinical surgery in the Royal Infirmary.

Mr. A. C. Bonner, wholesale druggist, Aberdeen, has presented a pair of bowls for competition amongst the members of the Torphins Bowling Club. Mr. Bonner is himself an enthusiastic bowler, being one of the "skips" of the Whitehall Bowling Club.

The West.

During the recent spell of tropical weather chemists had a busy time supplying summer drinks.

Mr. J. B. Michie, Glasgow, chemist and druggist, has passed the First Professional examination for the "triple qual."

A carrier-pigeon walked into the shop of Mr. John Crail, chemist, Annan, last week. After breakfast and a wash up, it settled down to rest, he says.

Mr. Archibald McAllister, scientific-instrument maker, residing in Garscube Road, Glasgow, has died from injuries sustained while bathing at Portpatrick.

At Kilmarnock Sheriff Court the other day, Mr. David Gemmill, chemist, Cairnview House, Beith, was fined 3*l*. for riding a motor-cycle at a speed of twenty-four miles an hour.

Clarence Colgrove Perry, an American, and said to be a doctor, has been sent to prison for six months for getting money from doctors in Glasgow and Edinburgh by false pretences.

The Edinburgh Degree in Pharmacy.

The St. Andrews University Court had before it on Saturday a Draft Ordinance No. 8 of the University Court of Edinburgh, embodying regulations for a degree of Bachelor of Pharmacy, and it was reported that notice of dissent had been given to the regulation that the first degree examination be the same as the first professional examination in medicine, it being suggested that the first examination ought (as the degree is a science degree) to be equivalent to the first B.Sc. examination; and that dissent had also been intimated to the regulation recognising the qualification of chemists and druggists registered under the Pharmacy Acts (or its equivalent) as one of the qualifications precedent to graduation, the grounds of objection being that it is unusual for a University to recognise the examinations of Examining Boards except those of a nature preliminary to University study, and that the regulation may shut from the degree students such as those wishing to become public analysts.

French News.

(From the "C. & D." Paris Correspondent.)

Several Nuns who managed two pharmacies for mutual benefit societies at Marseilles were prosecuted and fined 16f. apiece for having "infringed the law on religious associations by opening congregational establishments—to wit, pharmacies."

Pharmacy Reform.—At this month's meeting of the Paris Society of Pharmacy a letter was read from the Minister of Public Instruction acknowledging receipt of a resolution to the effect "that in any committee which might be formed for the study of the reform of pharmaceutical education the Society should be duly represented."

Cultivation of Sponges.—M. Allemand Martin, sub-director of the laboratory of Marine Biology at Sfax (Tunis), is studying the question of the acclimatation on the neighbouring coasts of Tunis of large commercial sponges obtained at Sfax. The results have so far been fairly satisfactory, and he hopes to do still better by varying the choice of localities.

Nail-Biting.—A doctor has presented to the Academy of Medicine an apparatus to prevent children from biting their nails. This ingenious instrument, inserted in the mouth, effectively prevents the upper and lower teeth from meeting; in fact, eating of any kind would be impossible. Temporary relief would, of course, have to be given to the infantile martyr at meal-times. "The most unmanageable child," says the inventor, "will thus be cured of the evil propensity."

A Tragedy in a Pharmacy.—On arriving at his pharmacy, which is situated at the corner of the rue Marbeuf and the rue François Ier, Paris, one morning last week, M. Gauthier, the proprietor, was surprised to find the shutters had not been taken down. He entered the room behind the shop, with the object of awakening the night-porter, Gautrène, who always slept there. He found Gautrène sitting in an armchair: the body was still warm, but life was extinct. An empty glass and a phial of sulphate of strychnine were close at hand.

The Opium Habit.—The Minister of the Marine has issued a second circular to the naval authorities regarding the practice of opium-smoking among French naval officers. He asks them to draw his prompt attention to officers manifestly under the influence of the drug on board ship, that he may deal stringently with such cases. Interviewed on this subject, Dr. Jeanselme, who spent long years in the

Far East, said he believed that the proportion of opium-smokers among the officers of French colonial and native regiments varies from 15 to 25 per cent.; and that opium dens are spreading from Toulon to Brest, Lorient, Rochefort, Cherbourg, and even Paris. He admitted, after some hesitation, that it is possible that some of the disastrous accidents to warships (which have recently become singularly frequent in the French Navy) might be traced to this habit.

A Queer Customer.—A pharmacist in the rue des Halles, Paris, received a visit a few days ago from a professional wrestler named Adhémar Deligne, who declared he had been injured by "Apaches," and requested that his wounds might be dressed. As this is the part of Paris where the hooligan element is strongest the pharmacist did not doubt the good faith of his visitor; but on inspection no trace of injury was visible, and he began to wonder whether Adhémar was responsible for his actions. Adhémar's next request—that the pharmacist would extract the magnet which the "Apaches" had placed in his stomach for the purpose of electrocuting him—left no doubt on this point. The pharmacist's slight and natural hesitation to perform this delicate operation at such short notice had the effect of so violently agitating Adhémar that it required no fewer than six policemen to remove him to more suitable premises than the bottle-lined walls and peaceful precincts of a pharmacy.

South African News.

(From the "C. & D." Correspondents.)

Note.—"The Chemist and Druggist" is regularly supplied by order to all the members of all the Pharmaceutical Societies in British South Africa, viz.:

- South African Pharmaceutical Association.
- Pharmaceutical Society of Cape Colony.
- Natal Pharmaceutical Society.
- Transvaal Pharmaceutical Society.
- Rhodesia Pharmaceutical Society.
- Northern District Chemists' Association.
- Pharmaceutical Society of Orange River Colony.

Cape Colony.

The Law Department, Cape Colony, notify that they have dropped the proceedings against the Reviva Company. It will be remembered the Government alleged that the firm in question were contravening the Medical and Pharmacy Act.

New Doctors and Dentists.—Andrew Maclean Pollock, M.B., Bac. Surg., Univ. Glas., 1904, has received a licence to practise as a medical practitioner in Cape Colony. The following have been authorised to practise as dentists in the Colony: Wilfrid James Parsons Dicks, L.D.S., R.C.S.(Eng.), 1906; Albert Collis, L.D.S., R.C.S.(Eng.), 1906.

Football.—The Amalgamated Chemists' Association Football Club, which was started in Cape Town this season, has just completed its first round in the Merchants' League. Although not so successful as their supporters could have wished, the team has had several wins, and has entered the semi-final for the Thorne Charity Cup. Some of the older members of the trade take a keen interest in the team and predict a more successful future for it. A rather serious accident occurred on Saturday, June 29, one of the team named Wragg coming in collision with one of the opposing backs and breaking his wrist.

A Chemist's Suicide.—An inquest was held at Cape Town on June 28 on the body of James Stevens Kernick, a Natal chemist and a native of St. Ives, Cornwall, whose suicide we reported last week (p. 75). In giving evidence, Mrs. Kernick, the widow, stated that her husband was thirty-nine years of age and came with his family from the Transvaal. He had suffered for many years from malaria, and had been ordered to the coast, but his health did not seem to improve. Latterly, since the death of their child, which took place last January, he had been very depressed. Marion Elizabeth Kernick, the daughter of deceased, gave corroborative evidence. Mr. A. H. Mathew (Messrs. Heynes, Mathew & Co.) stated that deceased left their employment on June 20. During the whole evidence nothing transpired that could have caused him to act so rashly. A verdict of "Suicide (death due to syncope from prussic-acid poisoning")" was returned. A relief fund opened by the Rev. S. H. Ravenscroft, Sea Point, for the widow and family, amounted on July 2 to 61*l*. 15*s*.

Transvaal.

Dr. Beecham, son of the late Thomas Beecham, of St. Helens, together with Mr. Harry Beecham, his nephew, and Mr. E. Glover, foreign and colonial manager for the firm, are at present on a visit to Johannesburg. Their programme embraces two months' business tour of South Africa.

PHARMACEUTICAL SOCIETY OF THE TRANSVAAL.

The ninth annual meeting of the Society was held at the Trocadero, Johannesburg, on June 27, the President (Mr. R. Q. Leeds) being in the chair. About sixty members were present.

Annual Report.—The President, in moving the adoption of the report and balance-sheet, congratulated the Society on being numerically stronger than in any previous year, and also on the satisfactory state of the balance-sheet. The report states that

The total receipts (including cash balance brought forward of 134*l*. 9*s*. 8*d*.) amounted to 233*l*. 16*s*. 2*d*. The expenditure was 83*l*. 17*s*. 11*d*., leaving a cash balance of 149*l*. 18*s*. 3*d*. Considering the fact that the subscriptions in the past year were only half the amount formerly paid and the trying times that have been experienced, the position is very satisfactory. During the year thirteen new members have joined the society, the number now on the roll being 106 members and one associate—a state of numerical strength never before reached. Twelve committee meetings and one special general meeting were held in the course of the year. The principal question before the Society was that of obtaining relief from the heavy Customs duties imposed upon preparations containing spirit. The Director of Customs was approached and an interview arranged. The chemists' view was laid before him, with the gratifying result that, among other concessions, practically the whole of the duty on South African spirit used in the manufacture of medicinal preparations is now rebated, and conditions of Customs supervision made reasonably easy. Mr. W. B. Rawlinson, who was elected on the committee at the last general meeting, resigned his position in August last on account of leaving this colony. Shop hours regulations have occupied a great deal of the Society's attention. In September last a movement was started by the shop assistants' associations to have all shops-hours regulated by Act of Parliament, and various local bodies framed draft recommendations for such an ordinance. Upon finding in the recommendations that opposition would be made by other trades to chemists keeping open after 6 p.m., a special general meeting was called. The subject was relegated, as far as Johannesburg was concerned, to the General Purposes Committee of the municipality, before whom the society laid their case. Your deputation advocated special consideration being given to chemists' interests. The whole matter, however, was found to be too complicated and contentious a one for local municipalities to deal with, and has been shelved by them until such time as it could be dealt with by Responsible Government. A select committee of the new Government is to be appointed to deal with this matter next session. In the untimely death last April of Mr. W. T. Skinn, late member of the Society and Pharmacy Board, pharmacy has suffered a regrettable loss. A by-election to fill the vacancy occurring on the pharmacy board was held in May, and the Society agreed upon nominating and supporting Mr. Charles Keir, who was duly elected. A considerable amount of attention has been given to revising and maintaining retail prices, with results that have been extremely satisfactory. Members in their own interests are requested to give their earnest assistance to the Society's efforts in these respects. It is pleasing to note that the Jeppestown chemists have now come into line and are heartily co-operating with the Society.

Office-bearers.—The following were elected as office-bearers for the ensuing year: President, Mr. A. Rennie; Vice-President, Mr. Austin Purnell; Hon. Secretary and Treasurer, Mr. S. M. Hendry; Committee, Messrs. A. Macdonald (of Messrs. Loewenstein, Adams, Ltd.), C. Kerr (of T. E. Jolly & Co.), R. Butters, R. Q. Leeds, A. S. Smith, J. W. Norman, Jas. Johnson (of Petersen, Ltd.); to represent Pretoria, Messrs. Tibbitt and

Raworth; Boksburg, Mr. B. O. Jones, M.L.A.; Krugersdorp, Messrs. Adcock and W. Thomson; Potchefstroom, Mr. C. A. Geen; Roodepoort, Mr. Thomson; and Germiston, Mr. G. Pirie.

New President and Vice-President.—Mr. Alexander Rennie, who was unanimously elected President, is a Scot. He served his apprenticeship with Messrs. Davidson & Kay, of Aberdeen. He is a "Duncan's" man, and after qualifying (in 1892) he was for two years with Messrs. J. & H. Mathews, of Queen's Gardens, Bayswater, before going out to Messrs. P. J. Petersen & Co. Mr. Rennie was appointed retail manager at Messrs. Petersen's Johannesburg branch, and he went through the Boer war, holding a commission in the Army. Since then Mr. Rennie has been in business on his own account at Pritchard Street, Johannesburg. He is one of the founders of the Transvaal Society, and has been as zealous in the interests of chemists generally as he is in his own business. Mr. Austin Purnell, who was elected Vice-President, hails from Somerset, and was apprenticed with Mr. T. Grant, late of Hill Road, Clevedon, Somerset. He was about two years with Mr. J. H. Mather, of Godalming, afterwards gaining his London experience with Mr. J. F. Harrington, of Kensington, and Messrs. Curtis & Co., of High Holborn. He was demonstrator at the City School of Pharmacy for eighteen months. Mr. Purnell has been with Messrs. Lennon, Ltd., for the last ten years, and served with distinction with the British troops during the Boer war. Mr. S. M. Hendry, the new Secretary and Treasurer, is also a Lennon's man. He hails from Aberdeen, and, after putting in two years in London, joined Lennon's in Johannesburg about three years ago.

New Members.—The following were elected: Messrs. J. Christie, G. Beiles, Edward Galpin, J. R. Jones, C. A. Geen, H. Teeger, F. A. Furness, Hugh Ross, A. H. Bodie (associate), Robert Neilson, and Hetherington.

Financial.—The balance in the bank was noted as being the best yet attained, and it was resolved to place 100*l.* as a fixed deposit. An honorarium of ten guineas was voted to Mr. A. Macdonald, the retiring Secretary, who was cordially thanked for his third year of successive work; it was agreed that the present state of the Society both numerically and financially was in no small measure due to his untiring efforts. It was suggested that a benefit society be started. This, however, was not agreed to. It was pointed out that any deserving case could be inquired into and dealt with by the committee out of a private fund. After the usual vote of thanks the meeting terminated.

American Notes.

(From the "C. & D." Correspondent.)

Y.M.C.A. School.—In America Young Men's Christian Associations have become popular educational institutions. In Detroit, for instance, the Y.M.C.A. has recently taken over the local school of pharmacy, which will be the first of the kind to be conducted under such auspices.

Acetanilide in H_2O_2.—A good deal has been heard recently about the content of acetanilide in hydrogen peroxide. It has suddenly become well known that this chemical is a very effective preservative of the peroxide solution, and that many manufacturers are using it with decided success. One manufacturer, however, who advertises his product as "the kind that keeps," uses no preservative, resorting instead to the expedient of wiring in the corks. This manufacturer has begun "a campaign of education" in the lay magazines against the use of acetanilide. He points out that the new Food and Drugs Act compels the presence of acetanilide as a preservative in any product to be stated upon the label, and he warns the public to beware of preparations containing it.

Camphor-cultivation.—In a recent address delivered before the Americus Club of Pittsburgh, Mr. James Wilson, Secretary of the Department of Agriculture, declared that the United States was successfully experimenting in the production of camphor. The Department, he said, has been distributing camphor-tree seed for several years, and thousands of trees are now growing throughout the South and in the Pacific Coast States. Two years ago serious efforts were made to develop the manufacture of camphor. By improvements in manufacturing processes satisfactory results have been accomplished, and a large manufacturing concern which uses $500,000 worth of camphor annually is now building up a camphor-grove of 2,000 acres in Florida, from which it hopes to make its camphor.

Quicksilver.—The output of quicksilver in the United States has of late years steadily decreased, partly owing to the gradual fall in the price, which is now $39 per flask, against $49 a few years ago. Four years ago the production was 32,000 flasks, but the reduction has averaged 2,000 flasks every year since. The output in 1907 is not expected to exceed 24,000 flasks. It is stated by a trustworthy authority that the demand which formerly absorbed a large amount of quicksilver in connection with the separation of silver ores does not now exist, although there is a large and growing consumption in the arts. The New Idria mine is the largest in the United States, and its 100,000 shares are owned by the directors and their friends. This property has paid to its shareholders to date $920,000 in dividends, against an original cost to them of $500,000, the company having been floated about ten years ago on the basis of $5 per share. The mine is not likely to show signs of exhaustion for many years. The management has encountered ore at a depth of 1,050 ft., but there is yet much ore remaining to be extracted above the 700 ft. level. The Aetna property, on the other hand, has petered out entirely, and the Boston Company has proved a failure, the ore bodies having turned out much under expectations. Shareholders thus lost all their money, and have besides a debt of $40,000 to $50,000. The New Idria is practically the only property in active and successful operation. The Napa is being worked in a small way, and is a little more than paying the cost of operating, while diamond-drilling is in progress in the search of new ore bodies.

Colonial and Foreign News.

German Pharmacy.—The thirty-sixth annual meeting of the Apotheker Verein is to take place in Eisenach from September 3 to 5. The chief subject for discussion will be the Imperial Pharmacy Bill.

Creolin in Germany.—The German Imperial Board of Health has withdrawn the restrictions on the sale of creolin, which hitherto has been treated as a poison and saleable only as such. It is now open for sale by all.

Fewer Students of Pharmacy.—In the present term there are throughout the German Empire 1,679 students of pharmacy at the various Universities. Last winter term there were 1,746, as against 1,767 in the preceding summer term.

Dearer Perfumery.—The Union of German Perfumers recently held a meeting in Berlin at which several proposals were made for the abolition of certain irregularities as regards trade-mark rights. Proposals were also discussed as to a decrease of the heavy duty of coconut oil. In view of the continued advance in prices for raw material, labour, etc., the meeting unanimously agreed to raise the prices of perfumery, and consumers are to be apprised by circular.

Austrian Sick-clubs.—Representatives of the Austrian apothekers had an interview with the Ministry in Vienna on June 10 in regard to the provision of the new medicine-tariff which compels them to give sick-clubs more than double the discount on prescriptions than formerly. Government statistics were produced showing that in 1906 5,255,480.69 kronen (217,728*l.* 7*s.* 3*d.*) was paid by sick-clubs to pharmacies; the average discount did not quite reach 15 per cent., while the new enactment provides 35 per cent., which would mean a loss to the apothekers of about 1¼ million kronen (52,083*l.*). The apothekers asked for immediate repeal of the new discount.

Cutting in Belgium.—Belgian pharmacists have succeeded in almost completely doing away with the cutting of prices of patent medicines. About ten years ago a society was formed in Brussels to buy collectively, one of the provisions being that the members should strictly adhere to the fixed prices of patents. Now, with the help of the recently founded "Nationale pharmaceutique," the movement includes 1,618 of the 1,712 public pharmacies in Belgium. Naturally the makers of specialities have had to conform to certain conditions, and, after having gained the co-operation of the home manufacturers, the foreign makers are now to be approached on the subject.

Italian Pharmacy.—The Italian law as to prescriptions containing poisons requires the pharmacist to keep the prescription and not to refill it without a new order from the doctor. It is not strictly observed.—A recent official inquiry on malaria shows that it is more the apathy and ignorance of the peasantry than the malaria that have to be contended with. Although quinine is now supplied free by the Government in the malaria districts, few care to avail themselves of this sovereign remedy, despite also the fact that in church and school pamphlets recommending and explaining this remedy are distributed. In consequence of all this, Southern Italy, in place of being fertile, is rapidly running to waste, and emigrants to the number of half a million annually leave for over-seas.—Sicily has been booming, thanks to King Edward and Emperor William, but there is no English pharmacy either in Palermo or Taormina.—Opening a pharmacy in Italy is not unattended by dangers even for Italians. Thus in a place near Rome a licensed pharmacist, having waxed old and idle, frequently shut up his pharmacy at midday. The Syndic (Mayor) of the place, at the inhabitants' request, remonstrated with him frequently in vain, and at length, forced to extreme measures, threatened to licence another chemist for the township. Even this failed, for with a smile of unmistakable meaning the pharmacist replied, "Yes, do! He might stand the climate for a week or so." The old man still officiates in his old way, and without opposition.—The San Remo season is now over. The principal pharmacies closed after having enjoyed a successful season.

India and the East.

The Mysore Government are to establish a Mycological and Entomological Laboratory for the Province.

The Government of Madras are spending 50,000*l.* on the purchase of Clayton's Disinfecting Machines, for use at the several ports in the Presidency.

Camphor, cocoa, cinnamon, and lemongrass are among the commercial products under trial on a large scale at the Government Tropical Plantation at Whajain in the Khasi Hills, Assam, and in each case the results arrived at give good promise.

Belladonna-root.—The steady demand that exists in India for belladonna-root has led to a further attempt being made to cultivate the plant in the Kumaon Hills, and the report that has been issued is distinctly encouraging as to ultimate success.

Insect Pest Prohibition.—The first case in which India has taken any steps to protect herself against a foreign insect pest is to be found in the prohibition just issued by Government against the importation by sea or land of American or West India cotton unless it has been fumigated to the satisfaction of the Customs collector.

The Eastern Bengal and Assam Government are disposing of the exclusive right to collect and remove india-rubber from the forests of the Kamrup Division, excepting the Government rubber plantations at Kulsi for the next rubber-tapping season, which begins on December 1, 1907, and ends on March 31, 1908. The forests in the Kamrup Division are both reserved and enclosed State forests.

The Report of the Chemical Examiner of Madras demonstrates the fact that some of the home restrictions in the handling and selling of poisons might well be put into force in India. Here is a case cited. A woman lost her jewels and consulted the village medicine man about her loss. She was provided with some "holy ashes," which were distributed among the suspected persons—a sort of rude trial by ordeal. The ashes were eaten, and soon the persons concerned were seized with arsenical-poisoning, one man dying, a *post-mortem* proving the presence of more than five grains of white arsenic in the system. If arsenic, mercury, and aconite—the most frequently used poisons—were not so easily procured, there are many other poisons that can still be had. Opium, ganja, morphine, and atropine are easily obtainable in some form or other: "Shatura" and "madar" grow in the neighbourhood of every village, and the oleander root is much used.

A Census.—In the following tables a census is given of the number of druggists and manufacturing chemists in Japan during the past five years, (*a*) being the total at the beginning of the year, (*b*) the number of new businesses opened during the year, (*c*) the number closed, and (*d*) the number that died. The first table deals with druggists:

	1902	1903	1904	1905	1906
a	23,758	25,051	26,228	27,181	28,101
b	2,234	2,171	2,059	1,892	2,666
c	824	850	891	910	623
d	117	144	135	142	119

This table deals with manufacturing chemists:

	1902	1903	1904	1905	1906
a	2,406	2,574	2,224	2,333	2,419
b	306	301	246	172	254
c	133	641	127	75	55
d	5	10	10	11	7

There are sixteen druggists who trade in limited and unlimited partnership (Goshi-kaisha), fourteen in unlimited partnership (Gomei-kasai), twelve as joint-stock companies (Kaboshiki-kaisha), and two trade as companies with limited and unlimited partnership combined (Kaboshiki and Goshi).

Russian News.

Russian Pharmaceutical Reforms.—At the second sitting of a Pharmaceutical Congress lately held in Petersburg the proposed regulations for pharmacists were discussed. The chief points of the project are as follows: The chief management of pharmaceutical matters is to be in the hands of an inspector and a pharmaceutical council; the head inspector and his assistant must be pharmacists. The six members of the pharmaceutical council are to be nominated by the Minister of the Interior, and two at least must have recently owned and managed a pharmacy. In a former sitting a resolution was accepted which set forth that the maintenance and opening of new pharmacies is to be permitted only to pharmacists who are Russian subjects.

Opium-smuggling in Russia.—Some interesting extracts from a lecture are given by the "Petersburger Zeit." on the smuggling of Chinese opium into Russia, the importation of which is strictly forbidden. In 1906, 26,881 poods (340,000 kilos.), valued at over 2,000,000r., was smuggled into Asiatic Russia over the Persian frontier alone. From this it may be gathered that the smuggling of opium from China is still more considerable, as there is a large Chinese population which is more addicted to opium than the Asiatic population of the Russo-Persian frontier. The prohibition has by no means stopped the importation of opium into Russia's Asiatic possessions, but the result has been a rise in the price. In consequence, opium in Turkestan costs 2,000r. per pood, whereas the price would decline to about 500r. if Russian subjects were allowed to sell opium. Agriculture in Turkestan, it is asserted, would also greatly benefit if permission to grow poppies were granted, as it is not only a simple but a profitable business. When poppies were formerly cultivated in Turkestan, each dessatine (2.7 acres) yielded a production to the value of 200r., and when it is considered that 30,000 dessatine would be neccessary to cover the consumption in the Asiatic possessions of Russia, it will be seen that some 6,000,000r. is annually lost because of the prohibition. Moreover, about a third of the gold obtained in Siberia goes to China in payment for smuggled opium. Each coolie crossing the frontier brings with him a few pounds of opium which has been bought for two or three roubles, and which can be sold again in Russian territory for 50r. per pood.

Legal Reports.

High Court Cases.

Idris *v.* the Viking Chemical Co., Ltd.

In the Chancery Division on July 19, before Mr. Justice Kekewich, Mr. P. O. Lawrence, K.C., said he had a motion in the case of T. H. W. Idris (trading as the Viking Food Essence Co.) *v.* the Viking Chemical Co., Ltd., to restrain the defendants from passing off their goods as plaintiffs', and infringing the plaintiffs' trade-mark.—Mr. Jessel, K.C., said he appeared for the defendant. It was a registered trade-mark and "passing-off" case. He did not think it was a case which could be tried on a motion.—His Lordship: Very well. Next sittings are long, I am sorry to say. (Laughter.)—Mr. Lawrence: We can arrange for a speedy trial.—Mr. Jessel said he would see whether he could give an undertaking to deliver pleadings during the vacation.—Mr. Lawrence said the defendants were selling and advertising the goods complained of from day to day, and the plaintiffs wanted to stop it.—Mr. Jessel: We think we have the right to do it.—Mr. Lawrence said he hoped his learned friend would undertake that his client should keep an account.—His Lordship: Yes; he must.—Mr. Lawrence said sales under the Viking name should be stopped by the defendants. They were advertising themselves as the Viking Co., and were selling Viking goods, which the plaintiffs had been known in connection with for many years.—Mr. Jessel explained that the defendants were only dealing in one article, and the plaintiffs were trying to get protection for goods of a different class. He would undertake to keep an account.—Mr. Lawrence said they could arrange the time for the delivery of the pleadings in the action.—Subsequently it was announced that an arrangement had been made with regard to the pleadings, etc.

Dental Company Case.

As briefly reported in our last issue, on Thursday, July 18, Mr. Justice Barton, sitting in Dublin, gave judgment in the case of the Attorney-General for Ireland (at the relation of Mr. Kervin E. O'Duffey) *v.* Myddletons, Ltd., surgeon-dentists, Belfast which was heard before his Lordship on June 13 to 15. His Lordship said:

In applying to the present case the authorities which have been cited, the particular form and character of this proceeding have to be borne in mind as well as the peculiar nature of the rather scanty evidence which the plaintiff has laid before the Court. Jaffe's case was an appeal from a Justice's conviction under Section 3 of the Dentists Act, 1878. Rowell's case was an application for a mandamus to the Registrar of Joint-stock Companies to register a limited company. Kennan & Co., Ltd., *v.* Duckworth was an action for work done and goods supplied. Appleton's case was, like the present one, an action for a chancery injunction at the suit of the Attorney-General to restrain a public fraud. But there is an important difference between that case and this one. In Appleton's case the Court had an easy task, because fraud was admitted. In the present case nothing is admitted, and the burden lies on the plaintiff to establish his case by evidence. The plaintiff has produced no real evidence as to the operations of the company and has relied principally upon the memorandum of association, official reports, and advertisements. I cannot say that the memorandum of association in this case is open to legal objection. The title of this company does not contain the word "dentist" or any of its synonyms, or any allusion to dentistry. The principal purpose of incorporation was to carry out dental operations by means of properly-qualified persons—a purpose which is not *per se* illegal. If the company were to carry out dental operations by means of unqualified persons serious questions might arise, including the question of *ultra vires*. But there is no evidence in this case upon that question of fact. We do not know who has carried out the dental operations of this company. We may have suspicion in view of the contents and character of these widely-circulated advertisements. But there is no evidence on the point. I have said enough to show that the plaintiff claims wider relief than the evidence justifies. The plaintiff has, however, established his right to relief claimed in paragraph 3 of the prayer of the statement of claim, with some amendment and enlargement. That relief is limited to misrepresentations as regards Alfred Myddleton, or persons of that name. Alfred Myddleton was the originator of the company, and has acted as its managing-director; but it has not been proved that he or any person of his name, has since its incorporation carried out any of the dental operations of the company. But we know that neither he nor any individual of his name is a registered dentist, and there is evidence, to which I shall refer, that the defendants have made representations to public officials in official documents and to the public in advertisements and announcements which were calculated to induce the belief that Alfred Myddleton or individuals of that name were or are registered dentists. In the report registered November 1, 1902, and made to the Registrar of Joint-stock Companies, pursuant to Section 12 of the Companies Act, 1900, we find in the list of directors Alfred Myddleton described as a dentist. The report was certified by him as director. In the registered return of allotments, from June 1902 to June 1903, made in pursuance of Section 7 (1) of the Companies Act, 1900, Alfred Myddleton appears as allottee of 994 out of 1,000 shares, and is described as dentist. The report was signed by Alfred Myddleton as secretary.

In the register of directors and managers (registered November 1, 1902) Alfred Myddleton was described as dentist, and the register is signed by him. In the list of persons holding shares made up to February 15, 1904, and signed by Alfred Myddleton as managing director and secretary, Alfred Myddleton was described as dentist. It is admitted that these descriptions of Alfred Myddleton as a dentist cannot be justified, but it is said that they are isolated acts not recently repeated or likely to be repeated. But they do not stand alone. I find in the advertisements of the company several passages which I think amount to representations which are reasonably calculated to lead the public to believe that the company comprises or employs persons named Myddleton, who are registered dentists. For example, in the handbill advertisements headed on one side "Reliable dentistry," and also in another headed on one side "Teeth of quality," there is the statement, "Make no mistake; ask for Myddletons, the largest dentists in Ireland." In several of the advertisements the company gives to the public their telegraphic address as "Myddletons, Dentists, Belfast." There are other notices and advertisements in which the company refer to themselves as "Messrs. Myddletons, Ltd., largest dentists in Ireland." These advertisements seem to me to be calculated to lead the public to believe that the company comprises or employs individuals of the name of Myddleton, who are properly qualified dentists. I must add that these representations have an added significance when they are coupled with the announcement that "anæsthetics, including chloroform, can be administered at any hour," as to which the public might be expected to look for and to be attracted by any representation of proper qualifications.

I am disposed to think that defendants' counsel endeavoured to found on Jaffe's case a larger claim of privilege for companies than the decision in that case will support. They claim for limited companies, as a result of that use, an unrestricted right to use the word "dentist" or its synonym in any and every shape, and in any way and every context. Jaffe's case decided that the word "person" in Section 3 of the Dentists Act, 1878, does not include artificial persons, and that the section hits individuals, but does not hit limited companies. But a company, although it may be exempted from the penalties imposed by that section, is not, in my opinion, thereby privileged to make false representations which are calculated to mislead the public as to the qualifications of the persons whom it comprises or employs. I think that the official documents and advertisements to which I have referred contain representations of that kind. There may be other advertisements or announcements of the same kind. Each might have to be considered on its own merits. There will be an injunction to restrain the defendant company and the directors and members thereof from employing the defendant, Alfred Myddleton, under the title of surgeon-dentist, or dentist, to carry on business under the memorandum of association of the said company, and from holding forth or representing in the register of directors and managers, or the reports or returns pursuant to the Companies Acts to the Registrar of joint-stock companies, or in their advertisements to the public, or elsewhere, or otherwise that the defendant, Alfred Myddleton, is a dentist, or that the defendant company comprises or employs persons of the name of Myddleton, who are dentists. The plaintiff has partially succeeded, and if he had limited his claim to the relief claimed in paragraph 3 of the prayer of the statement of claim, he would be entitled to the whole cost of the action. The order as to costs will be that the plaintiff shall have the costs of the action save in so far as they have been increased by the relief claimed in the other paragraphs of the prayer of the statement of claim which shall be set off.

Mr. S. L. Brown: Your Lordship has dismissed the action except as to paragraph 3?

His Lordship: Yes; that appears in the order.

Pharmacy Act, 1868.

PROSECUTIONS IN GLASGOW.

At Glasgow Sheriff Court on Friday, July 19, before Sheriff Mackenzie, Mr. Richard Bremridge, Registrar of the Pharmaceutical Society of Great Britain, sued David McDowall, 374 (formerly 352) Paisley Road, West Govan, Glasgow, for penalties of 5*l.* each, incurred under Sections 1 and 15, by having on July 1 and 10 kept open shop for retailing, dispensing, or compounding of poisons, in so far as (1) he did by the hands of his assistant or shopman, Andrew Aylmer, who is not a registered chemist and druggist, sell to Donald McLean, 36 York Place, Edinburgh, a quantity of opium as an ingredient in laudanum; (2) did himself personally on July 10, he not being a registered chemist and druggist, sell to Donald McLean a quantity of opium as an ingredient in a quantity of laudanum; and (3) on the same dates used the name or title of "chemist" on labels affixed to bottles given to McLean and to Mr. J. R. Hill, as well as on a bill advertising Angier's Emulsion. The respondent pleaded guilty, and Mr. Armstrong, solicitor, explained on his behalf that respondent had been in this shop twenty-seven years. He was for five years manager, and afterwards he took over the business on the death of the proprietor. During the twenty-two years he had had the shop nobody had ever interfered with him till now. He did not qualify as a chemist, but on the passing of the Act he made application to be registered, mentioning the fact that previous to the passing of the 1868 Act he had kept a shop in High Street. The Society, however, were not satisfied, and refused registration.—Mr. James Barrie, solicitor, who appeared for the Pharmaceutical Society, thought this was a bad case. Respondent, being only an assistant at the time, was not entitled to apply for registration at the passing of the Act. During the period of over twenty years he had been in the full knowledge that he had no qualification whatever.—Sheriff Mackenzie looked upon the offences as serious, pointing out that the provisions of the Act were made for the safety of the public. His lordship imposed a penalty of 2*l.* 10*s.* for each offence, with 1*l.* 1*s.* 6*d.* of expenses—6*l.* 1*s.* 6*d.* in all.

Andrew Aylmer, assistant in the shop of David McDowall, was next charged with selling poison as above-mentioned, and his lordship imposed a modified penalty of 10*s.*, with 1*l.* 1*s.* 6*d.* of expenses.

Weights and Measures Act.

UNSTAMPED WEIGHTS.

At Tottenham Police Court on July 18, Oliver & Co., Ltd., chemists, of Fore Street, Edmonton, were summoned by Mr. A. L. Bridge, inspector of weights and measures, for having in their possession for use in trade seven weights which were unstamped.—Mr. Oliver Edmunds explained in evidence that the company had a contract with a firm to attend to their weights, but those found by the inspector were not trading weights. They were a small set, such as the company retailed to photographers. They had been brought to the shop with some scales which required to be repaired, and the assistant put them by mistake on the dispensing-counter, so that they got mixed with the others.—Mr. Bridge: Unfortunately one was in use. Had this explanation been given to me before, I should have looked into it.—Mr. Edmunds replied that he did not know it at the time, as the assistant was away.—A fine of 10*s.*, and costs, was imposed. The weights, which the inspector said were correct, were handed back.

Sale of Food and Drugs Act.

TINCTURE OF IODINE.

At Tottenham Police Court on July 18, Chas. H. Chipchase, chemist and druggist, Edmonton, was summoned for selling tincture of iodine which was deficient in iodine and iodide of potassium to the extent of 18 per cent. Mr. W. Windsor appeared for the defendant, who pleaded guilty.—Mr. A. L. Bridge, food and drugs inspector, said that he is now paying special attention to chemists and druggists in his district. For some time he had not had cause to complain of any of them, and in this case he did not think that there had been any malpractice on the part of Mr. Chipchase himself. The analyst's certificate stated that the sample contained only 20.5 grams each of iodine and potassium iodide per 1,000 c.c., whereas it should have contained, according to the British Pharmacopœia, 25 grams of each. Mr. Windsor, addressing the Bench in mitigation of the offence, explained that the defendant purchased the tincture from his wholesale druggist, and the bottle had been put on the shelf and unopened prior to this purchase. The Bench imposed the nominal penalty of 10*s.* and costs, including the analyst's fee, the Chairman (Dr. F. H. Daly) remarking that if iodine were a drug used in prescriptions it might be a very serious matter to have it so deficient in its active principles. He suggested that the defendant should change his wholesale druggist.

With regard to the beeswax case reported in our issue of July 20, Mr. J. Davies informs us that the wax was bought as genuine, and at the price of genuine, from one of the best houses in the trade, and this firm took over all responsibility immediately they heard of a prosecution.

Bankruptcy Reports.

Mr. Edward Iszatt Essam, trading as a chemist at Billingborough, Lincs.—This debtor again appeared at Peterborough Bankruptcy Court on July 18, and, the trustee being perfectly satisfied with his conduct and answers the examination was closed.

Re William George Wells, Chemist and Druggist, 41 Lower Stone Street, Maidstone.—The debtor has filed his petition in the Maidstone Bankruptcy Court. The first meeting of creditors is fixed for August 14, at the Official Receiver's (Mr. R. T. Tatham) offices, King Street, Maidstone, at 10.45, and the public examination of the debtor will follow at the Sessions House the same day. From the debtor's statement of affairs it seems that the gross liabilities amount to 734*l.* 16*s.* 7*d.*; there are ninety-four unsecured creditors (552*l.* 10*s.* 4*d.* , two creditors partly secured (150*l.*) of the estimated value of 43*l.* only; creditors for rent and rates 32*l.* 6*s.* 3*d.* On the opposite side there are given 2*l.* 12*s.* cash in hand; stock-in-trade, etc., valued at 225*l.*; furniture, 15*l.*; book debts, 9*l.* 16*s.* 7*d.*; leaving a deficiency of 439*l.* 8*s.* The causes of failure are stated to be insufficient capital and depression in trade. Debtor commenced business as a chemist and druggist at New Romney about January 1890, with about 100*l.* capital. He remained there until 1900, and then sold the business for 600*l.*, which was swallowed up with debts owing. After that he was employed as a chemist's manager for a couple of years, and then took his present business. He has kept various books and made out balance-sheets annually. He first became aware of his insolvency about a month since. He privately arranged with his creditors in 1897 and paid 12*s.* 6*d.* in the pound composition on debts of some 300*l.* to 400*l.* The partly-secured creditors hold an assignment of a life policy for 200*l.* for money advanced in 1904. With the exception of some 80*l.* for borrowed monies, the greater part of the debts are trade accounts. The debtor's deficiency account shows excess of liabilities over assets on July 17, 1906, 280*l.*; household expenses of himself and family for that period 108*l.*; bad debts 1*l.*; and depreciation in value of stock, etc., 200*l.*; net profit from business for the twelve months 150*l.* The debtor's affairs are now in the hands of the Official Receiver, 9 King Street, Maidstone.

Gazette.

Partnerships Dissolved.

Brackenbury, H. B., and Hobday, J., under the style of Brackenbury & Hobday, Quermore Road, Stroud Green, and Beverley House, Colney Hatch Lane, N., general medical practitioners.

Wood, J. W., and Alabone, E. W., under the style of J. Wells Wood, Green Lanes, Stoke Newington, N.E., analytical and dispensing chemists.

The Bankruptcy Acts, 1883 and 1890.

ADJUDICATION.

Wells, William George, Maidstone, Kent, chemist and druggist.

The importations of opium into the province of Ningpo in 1906 show a general falling-off, owing to the issue of official proclamations setting forth the injurious effects of the drug. No further steps have, however, been taken in the Ningpo district to put in force the anti-opium regulations issued by the Chinese Government.

New Companies and Company News.

Oxychlorides (1907), Ltd.—Capital 150,000*l.*, in 1*l.* shares. Objects: To adopt an agreement with Oxychlorides, Ltd., of Winchester House, E.C., for the acquisition of certain properties and rights, and to carry on the business of miners, smelters, chemists, etc.

J. H. Riddle, Ltd.—Capital 6,000*l.*, in 10*l.* shares. Objects: To take over the zusiness of soap-manufacturers carried on by J. H. Riddle and J. Unsworth at Newton Soap-works, Manchester, as J. H. Riddle. No initial public issue. The managing directors are J. H. Riddle and J. Unsworth. Office, Newton Soap-works, Holland Street, Manchester.

W. L. Edwards, Ltd.—Capital 500*l.*, in 1*l.* shares. Objects: To take over the business of makers, vendors, and fitters of artificial teeth, teeth-extractors, makers of, and dealers in, surgical instruments and appliances, artificial limbs, and dental materials, etc. The first directors are W. L. Edwards and A. Edwards. Registered office, 23 Hepburn Road, Bristol.

Anglo-Japanese Trading Co., Ltd.—Capital 10,000*l.*, in 1*l.* shares. Objects: To adopt an agreement with W. Henry and E. Jennings, and to carry on the business of manufacturers of, and dealers in, artificial camphor, chemicals, chemical substances, patent medicines, and proprietary articles. The first directors are F. D. Vine, G. Mattei, and R. Ralph. Registered office, 212 Westminster Bridge Road, S.E.

Edward Watson & Co., Ltd.—Capital 1,000*l.*, in 1*l.* shares. Objects: To take over the business of chemists, druggists, drug and patent-medicine vendors, dealers in pharmaceutical, medicinal, chemical, optical, surgical, photographic, and other preparations and apparatus carried on by E. Watson at 100 Mitcham Road, Tooting, as "Watson & Co." The first subscribers are: E. Watson, chemist; A. Page, clerk; R. King, gentleman; A. O. Sheppard, accountant; W. Hudson, gentleman; G. G. Wood, joiner; E. J. B. Osborne, gentleman; R. J. Wood, clerk.

Ucha Co., Ltd.—Capital 150*l.*, in 1*l.* shares. Objects: To carry on the business of drug-store proprietors, manufacturers of, and dealers in, proprietary articles, to employ qualified persons to act on the company's behalf as pharmaceutical, analytical, and advising chemists, opticians, etc. The first subscribers are: W. G. Dunstan, 186 Kirkwhite Street, Nottingham, tailor; W. H. Sheppard, tailor; D. J. Hamilton, hosiery manager; C. Redfern, lace warehouseman; F. W. Hamilton, warehouseman; A. Knott, railway goods foreman; and J. O. Armour, 135 Arkwright Street, Nottingham, pill and ointment manufacturer.

Apollinaris & Johannis, Ltd.—The annual meeting was held at the Holborn Restaurant on July 18, the Earl of Bessborough, chairman of the company, presiding. In moving the adoption of the balance-sheet and accounts (see *C. & D.*, July 6, p. 10), the Chairman stated that the sales of Apollinaris had increased by one million bottles during the year. Since 1895 the sale had grown by 12,000,000 bottles, the figures being 18,911,000 in 1895 and 31,000,000 in the year under review. The growth of the medicinal water "Apenta" did not run into such heroic figures, but it was progressive, an increase of 10 per cent. being shown in the past year. Bottles cost them much more than formerly, but, in the hope of lessening expenditure under this head, they were taking steps to establish a glass factory in Germany in order to manufacture their own bottles. Considerable progress has been made in the introduction and erection of new machinery, both at the Apollinaris spring in Germany and at the Apenta springs near Budapest. The report, declaring a dividend of 5 per cent., was adopted.

Births.

Adan.—At 10 Cattofield Place, Aberdeen, on July 18, the wife of James W. Adan, chemist and druggist, of a daughter.

Bolton.—At 24 Compton Road, Winchmore Hill, on July 21, the wife of Horatio Nelson Bolton, Jun., managing director of Messrs. Bristowe & Co., Ltd., of a son.

Marriages.

Greaves—Benstall.—At Ironville, Codnor Park, on July 17, Frederick Hedley Greaves, managing director of W. S. Greaves, Ltd., chemists, to Emma Florence, third daughter of Mr. John Benstall, Forge House, Codnor Park.

Wooster—Young.—At Grace Hill Wesleyan Church, Folkestone, on July 16, by the Rev. David Young, assisted by the Rev. George Woodcock, Herbert Edward Wooster, chemist and druggist, second son of John Ratliff Wooster, chemist and druggist, Ealing, to Evelyn Bertha, third daughter of the Rev. David Young, of Folkestone.

Deaths.

Lees.—At Ventnor, Isle of Wight, on July 9, Mr. James Lees, chemist and druggist, aged forty-six.

Miller.—At the English Pharmacy, 46 Frederick Street, Port of Spain, Trinidad, B.W.I., on July 1, Mr. W. Kelly Miller, aged thirty-five.

Business Changes.

Properly authenticated business notices (not being advertisements) are inserted in this section free of charge if promptly communicated to the Editor.

Mr. C. E. Hicks, of East Reedham, Norfolk, has disposed of his business to Mr. G. Wadsley.

Mr. R. B. Calderwood, chemist and druggist, has taken over the business of Mr. W. T. Martin, at Lewes.

Mr. W. R. Harvey, chemist and druggist, has purchased the business of Mr. W. R. Ratherbam, late of Whyteleafe.

Mr. S. F. Body, chemist and druggist, has purchased the business of Mr. A. G. Doble, at Station Road, Westcliff-on-Sea.

Mr. G. W. Green has disposed of his business at 35 Perry Vale, Forest Hill, to Mr. E. E. Richards, chemist and druggist.

Mr. J. Waters, chemist, of Darlington, has opened a very handsomely fitted shop in Prebend Row, the centre of the town, as a branch.

Messrs. Corfe & Sons, chemists, 5 Gabriel's Hill, Maidstone, have purchased the private recipes of the late Mr. Rogers, chemist, of that town.

Mr. W. R. Creasey, chemist and druggist, has recently purchased the business at Billingborough, Lincs., formerly carried on by Mr. E. J. Essam.

Mr. W. Cariss, late of Roundhay Road, Leeds, has purchased the business lately carried on by Messrs. Jubb, Ltd., at Linthorpe, Middlesbrough.

The business lately carried on by Mr. Allan Morrison under the style of Croydon & Morrison, in Newcastle, Staffs, is being closed and the stock sold off retail.

SHEFFIELD CHANGES.

When the British Pharmaceutical Conference visited the iron city three years ago we reviewed the position of pharmacy there pretty thoroughly. The purpose of these notes is to bring matters up to date.

The most encouraging feature of the enterprise on the part of the younger generation is that the general report is "doing satisfactorily." With most of them photography is a prominent side-line, Mr. Hirst being an expert camerist. Photography is becoming more and more a pharmaceutical annexe. Mr. J. G. Jackson, of Abbeydale Road, devotes a separate shop to it solely, and Mr. H. G. Williams, on the Moor, finds it necessary to give it an increasing amount of window-space. The recent local exhibition by a well-known photographic firm has given some offence and annoyance amongst the numerous pharmaceutical dealers in their goods, as one local firm (fortunately themselves chemists) were advertised as the local district depot, as if the other dealers were non-existent.

Another change is that Mr. H. G. Watson, chemist and druggist, 240 Moorfields, Shalesmoor, is giving up business owing to the property having been acquired by the Corporation.

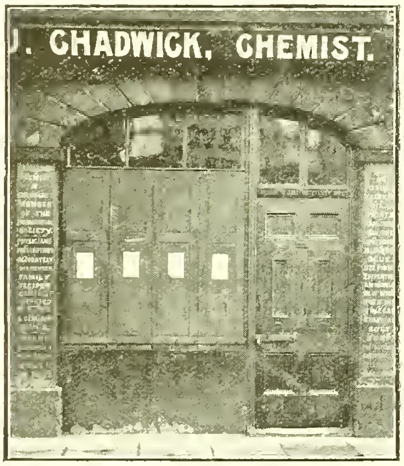
Educationally the situation promises to improve, for as the result of negotiations between the local Pharmaceutical and Chemical Society and the representatives of the University, it seems probable that something will be done to provide opportunities for pharmaceutical education and to fill the gap which (except for the classes to which Mr. John Austen has stuck so loyally) has existed since the closing of the school of pharmacy formerly belonging to Messrs. Greaves & Turner.

This absence of educational facilities may have something to do with the dearth of apprentices in Sheffield, but it is small comfort to those to whom the future of their craft is a matter of some concern to see still another list of examination results issued from Bloomsbury Square without a single Sheffielder in the list.

Mr. Ellis.

On the way up Ecclesall Road one notices the smart-looking pharmacy opened a short time ago by Mr. Bernard Ellis. Although not a Sheffielder Mr. Ellis was apprenticed with Mr. Clayton in the Wicker. He studied at the University of Nottingham before passing the Minor, and was one of the founders of the flourishing debating society of that institution. He has pronounced opinions on pharmaceutical questions, and shows the results of his Nottingham training in debate in the expression of his views.

We give a picture of the unique pharmacy in Langsett Road, which has recently been taken over by Mr. John Chadwick.

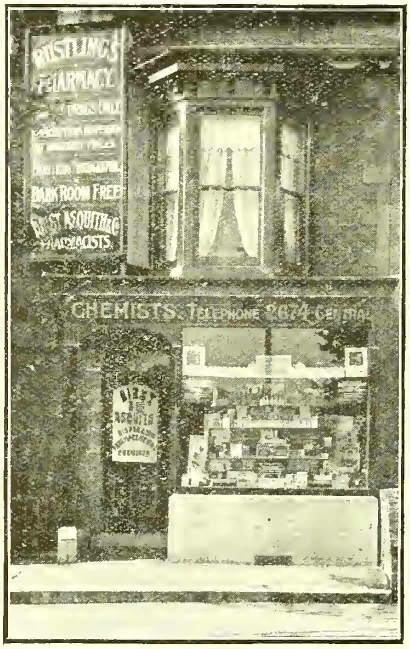


This pharmacy was built in the gateway leading to the yard at the rear, and out of this unpromising site Mr. H. B. Fallding, the original proprietor, fitted up a neat and effective pharmacy. Mr. Fallding is now living in retirement in the South, and his son, who followed him in the business, has gone to Canada to take up farming. Mr. Chadwick went to Sheffield with a wide and varied experience, and takes an active interest in local pharmaceutical matters. He is a member of the buying section of the local society.

Whilst it is a depressing fact that of recent date several old-time local pharmacies have had to close their doors, it is refreshing to find the younger generation is moving with the times and keeping well abreast of the development of the city. Mr. J. T. Appleton, of Walkley, has opened a branch at Woodrests, and Mr. F. Medley, who has quitted his Bridgehouses premises for the suburban delights of Pitsmoor (Firth Park Road), has opened a branch farther out in the same district, in Page Hall Road.

At the other side of the city Mr. Rowland Dixon, Ph.C., whose Endcliffe pharmacy at Hunter's Bar was previously one of Sheffield's smartest suburban pharmacies, has further improved his premises by taking in the house adjoining, thus forming a double frontage. The new shop has been fitted by Messrs. Evans Sons Lescher & Webb, Ltd., Liverpool, and presents a very handsome appearance, both inside and out. Mr. Dixon is extending his operations, and will shortly open a branch at Banner Cross.

A new neighbour of Mr. Dixon's is Mr. Frederick B. Hirst, Ph.C. (Hirst, Asquith & Co.), whose newly-opened premises in Rustlings Road present a compact and effective appearance. Mr. Hirst was until recently manager for Messrs. Watson & Co., High Street. He was apprenticed with Alderman Ward, of Batley Carr, near Dewsbury, and has had experience of a varied character at New Ferry, Liverpool, York (where he was manager for Messrs. Everdale), and elsewhere. He was also for a time demonstrator at the Manchester College of Pharmacy, and greatly prizes a valuable marble timepiece which was presented to him by Mr. Turner (the principal) and the students when he severed his connection with the college.



Mr. Hirst Seeking for Bargains in the *C. & D.*

Perhaps the most striking change amongst shops in an individual case is that of Mr. George Owen, of the Park, whose old premises three years ago were as shown in the first picture. To-day Mr. Owen's prosperous business is housed in what is one of the most commodious and complete suite of premises in the provinces for a retail business. The main shop is very extensive, and with the store at the rear extends from South Street to the street at the back. A glance down the shop gives one a good idea of the varied and interesting scope of the business, the pharmacy proper occupying the left side, whilst the other is devoted to the extensive oil, colour, etc., business. The cellar storage extends the whole length of the premises, and in addition there is accommodation for the storage of drugs, etc., on the upper floor. Mr. Owen is the representative of the oldest pharmaceutical family in the city, and it is interesting to note how he has developed the veterinary and other lines of business handed down by his predecessors. He has refreshingly original views on matters of pharmaceutical politics, and holds a strong opinion that a good deal of time is spent on talking about "the dignity of the craft" which might be utilised to better purpose.

Messrs. Clark & Co., of West Street, have taken advantage of the removal of their old premises for street-widening purposes to erect a fine structure on their valuable corner site.

The business of Messrs. Clark & Co., West Street, was founded in 1853 by the late Mr. Jennings, and was carried on for many years by the late Mr. John Clark, but has been in the hands of Mr. C. A. Gardner for the past ten years. Mr. Gardner specialises in the heavy trade. It was here that Mr. John Humphrey was an assistant before he gave up the retail trade for journalism.

Personalities

Mr. John Taylor, J.P., chemist and druggist, Torquay, has been elected to a vacancy on the Devon County Council.

In our account of the Manchester local pharmacies last week the accompanying portrait of Mr. Thomas Swindells, chemist and druggist, Eccles, was unintentionally omitted. We now also add one of another member of the local committee, Mr. John L. Smith, managing director of John L. Smith, Ltd., who have eight chemists' shops in Pendleton and district. Mr. Smith was apprenticed to Mr. J. Atkinson, Tynemouth, and afterwards was an assistant to Mr. G. S. Butcher, Salford, managing the branch business at Pendleton now carried on by Mr. J. Harrop, Ph.C. He passed the Minor in December 1881, and opened a shop at 180 High Street, Pendleton, acquiring from time to time other businesses until he has now eight branches. The business was converted into a private limited-liability company in 1891.

Mr. T. Swindells.

Mr. John L. Smith.

Mr. Vincent Wood, Albion Place, Blackfriars Bridge, London, S.E., informs us that he is taking his son, Mr. Vincent A. Wood, into more intimate business relations with him by making him one of the partners in the Carlton Hosiery Works, and also by his taking up the representation of the whole business "on the road." Mr. Wood, Jun., is just entering on his majority. He is a Dulwich College boy, and while he has been going through all departments of his father's business he continued his studies, especially on the scientific side, at the Northampton Institute, taking the complete course in optics. He knows the surgical-appliances business well from the theoretical and practical sides, and he will, we doubt not, have a good welcome "on the road," where he will rank among the tallest. He is 6 ft. 1 in. in his stockings.

Mr. V. A. Wood.

The British Pharmacopœia.

Another sign that the revision of the 1898 edition of the British Pharmacopœia is going on is the following circular which has been issued on behalf of the Committee of Reference in Pharmacy:

17 Bloomsbury Square, London, W.C.,
July 1907.

Dear Sir,—You are doubtless aware that the General Medical Council is taking steps to revise the present British Pharmacopœia, and that, with this object in view, a number of pharmacists nominated by the councils of the pharmaceutical societies of Great Britain and Ireland have been formed into a "Committee of Reference in Pharmacy," of which I have the honour to be Chairman.

In order that the next edition of the Pharmacopœia may be adequately brought up to date, it is necessary that such official preparations as are seldom prescribed should be omitted, and that such others as have come into sufficient use should be added. The President of the General Medical Council has accordingly requested the Committee of Reference in Pharmacy to obtain statistics regarding the frequency with which medicines, official, non-official, and proprietary, are prescribed throughout Great Britain and Ireland.

The interest that you have taken in all matters of general pharmaceutical importance has convinced the committee that you would gladly assist in the work of obtaining such statistics. The committee, therefore, invites your cordial co-operation and trusts that you will be able to procure for it analyses of at least   prescriptions.

As many of the official preparations are in such frequent demand that no reasonable doubt can be entertained as to the desirability of retaining them, the committee has compiled a list (a copy of which is enclosed) of old and new remedies concerning the retention or introduction of which some doubt may exist.

In order that the prescriptions analysed may fairly represent the medicines prescribed at the present time, it is desirable that they should be taken at various seasons of the year, and not in any way be selected. The Committee would suggest that one-fourth of the prescriptions should be taken in each quarter of the year—say consecutive prescriptions copied after January 1, April 1, July 1, and October 1, 1906.

Preparations in common use, such as tincture of nux vomica, bicarbonate of sodium, etc., are not included in the list, and may be passed over at once. In the case of medicines less frequently prescribed, whether official, non-official, or proprietary, reference should be made to the list, and, if found, a mark should be placed against the preparation each time it occurs. Non-official and proprietary preparations not in the list should be added on the left-hand page, which is left blank for that purpose, a mark being made against these also for each occurrence.

The lists, when filled, should be returned to the secretary of the Committee of Reference in Pharmacy, Professor Greenish, 17 Bloomsbury Square, London, W.C., not later than October 1, 1907. The secretary will also be glad to supply more lists if desired.

It is hoped that in this way statistics may be obtained from the whole of Great Britain and Ireland thoroughly representative of the medicines that are at present prescribed, and that, in consequence, the next edition of the British Pharmacopœia may in this respect lack nothing in completeness.

I am, dear Sir,
Yours faithfully,
Walter Hills,
Chairman of the Committee of Reference in Pharmacy.

The list referred to contains nine and a half pages of names of articles, the facing pages (left) being blank (for proprietary articles and the like), and opposite the printed titles (as under) are two columns for records. The abbreviations are ours :

Analysis of 100 Prescriptions Distributed over the Year 1906.

A.B.C. liniment
Aceton.
Acet. ipecac.
Acid. acetyl-salicyl.
Acid. chromic.
Acid. cresylic.
Acid. formic.
Acid. glycerophosph.
Acid. hippuric.
Acid. hypophosph.
Acid. trichloracet.
Adrenaline
Æther ozonic.
Alumen exsic.
Ammon. biphosphas
Ammon. phosphas
Aq. anisi
Aq. carui
Aq. fœniculi
Aq. menth. virid.
Aq. pimentæ
Araroba
Argent. nit. indur.
Argent. nit. mitig.
Armoraciæ radix
Benzonaphthol
Bismuthi oxid.
Bismuthi phenas
Bismuthi subgallas
Bougies of iodoform and eucalyptus
Bromoform.
Caffein. sodio-salicyl.
Calcii bromid.
Calcii formas
Calcii glycerophosph.
Calcii iodid.
Calcii lactas
Cambogia
Camphor. monobrom.
Cantharidin.
Castorum
Charta sinap.
Chinosol
Chloral cum camph.
Chloralamid.
Chloroform. camphorat.
Citarin
Colchicinæ salicyl.
Collodium belladonnæ
Collodium salicylat.
Confect. piperis
Confect. rosæ gall.
Conii folia
Creosote carb.
Cusparia cort.
Cusso
Dec. granati cort.
Digitoxin.
Elaterin.
Elaterium
Elix. aurant.
Elix. glycerophosphat.
Elix. heroin. et terpin. co.
Elix. saccharin.
Emp. belladon. liq.
Emp. hydrarg.
Emp. menthol
Emp. plumbi iodid.
Emuls. ol. morrhuæ
Emuls. ol. morrhuæ c. hypophosph.
Emuls. petrolei
Emuls. petrolei c. hypophosph.
Ethereal soap solution
Ethyl chlorid.
Eucain.
Eucalyptol
Ext. red bone-marrow
Ext. conii liq.
Ext. damiana liq.
Ext. eucalypt. liq.
Ext. euonym. liq.
Ext. euonymin. liq.
Ext. fuci vesic. liq.
Ext. grindelia liq.
Ext. guarana liq.
Ext. jalapa
Ext. kava kava liq.
Ext. kola liq.
Ext. krameria
Ext. malt.
Ext. malt. liq.
Ext. malt. ol. morrhuæ
Ext. medullæ rub. liq.
Ext. Pareiræ liq.
Ext. physostig.
Ext. pini sylvest. liq.
Ext. quillaia liq.
Ext. salicis nigra liq.
Ext. scilla liq.
Ext. senna leg. liq.
Ext. stramon.
Ext. strophanth.
Ext. viburn. prun. liq.
Fel bovin. purif.
Ferri et quin. et strych. cit.
Ferri glycerophosph.
Ferri hypophosph.
Ferri lactophosph.
Ferri pyrophosph.
Ferri sulph. gran.
Formaldehyd.
Gelseminina
Gelseminina hydrochlor.
Glycerin. alum.
Glycerin. amyli
Glycerin. belladonna
Glycerin. glycerophosph. co.
Glycerin. heroin. co.
Glycerin. papain.
Glycerin. thymol co.
Granat. cort.
Guaiacol
Guaiacol carb.
Hæmoglobin.
Helmitol
Hemidesmi radix
Heroin.
Hexamethylenetetramine
Hyd. iodid. virid.
Hydrastine
Hydrastine hydrochlor.
Hydrastinin. hydrochlor.
Ichthyol ammon.
Ichthyol sodium
Inf. cusparia
Inf. ergota
Iodipin.
Laurocerasi fol.
Lecithin.
Lin. capsici
Lin. croton.
Lin. hydrarg.
Lin. sinapis
Liq. acidi chrom.
Liq. alum. acet.
Liq. atropin. sulph.
Liq. auri et arsen. brom.
Liq. calc. sacch.
Liq. calc. sulph.
Liq. calumbæ conc.
Liq. chiratæ conc.
Liq. cuspariæ conc.
Liq. ferri albumin.
Liq. ferri dialysat.
Liq. ferri pernit.
Liq. krameria conc.
Liq. morphina tart.
Liq. potass. permang.
Liq. quassia conc.
Liq. rhei conc.
Liq. sarsæ co. conc.
Liq. senegæ conc.
Liq. sennæ conc.
Liq. serpent. conc.
Liq. sodii arsen.
Liq. sodii ethyl.
Lithii bromid.
Lithii formas
Lithii salicyl.
Lotio hydrarg. flav.
Lupulin.
Magnesii glycerophosph.
Magnesii lact.
Manganesii glycerophosph.
Manganesii hypophosph.
Manganesii lact.
Manganesii oxid. precip.
Mesotan
Methyl salicyl.
Methylsulphonal
Mezerei cort.
Mist. alba
Mist. ammon.
Mist. amygd.
Mist. bismuthi co.
Mist. bismuthi cum pepsin.
Mist. creosot.
Mist. heroin. co.
Mist. olei ricini
Oleo-resin. capsici
Oleo-resin. zingib.
Ol. anthem.
Ol. aurant.
Ol. cadin.
Ol. copaib.
Ol. cubeb.
Ol. fœniculi
Ol. menth. virid.
Ol. myrci.
Ol. origani
Ol. phosphor.
Ol. sinapis vol.
Ol. thymi
Pancreatin.
Paraldehyd.
Pelletierinæ tannas
Phenolphthalein.
Physostig. sem.
Picrotoxin.
Pilocarpinæ hyd.
Pil. aloes et asafet.
Pil. cambog. co.
Pil. scammon. co.
Pimenta
Piper nig.
Piperazin.
Plumbi carb.
Plumbi iodid.
Potass. bichrom.
Potass. formas
Potass. glyceroph. (50 per cent. sol.)
Potass. tart. (neutral)
Pulv. catechu co.
Pulv. elat. co.
Pulv. lobeliæ co.
Pulv. opii co.
Pulv. scammon. co.
Quininæ acetylsal.
Quininæ formas
Quininæ salicyl.
Resorcin.
Sambuci flores sicc.
Scammonium
Sodii biphosph.
Sodii cacodyl.
Sodii citras
Sodii formas
Sodii glyceroph.
Sodii lactas
Sodii nitris
Sodii sulph.
Sparteinæ sulph.
Spirit. æther. co.
Spirit. armoraciæ co.
Spirit. anisi
Spirit. oajnpu.
Spirit. cinnam.
Spirit. juniper.
Spirit. lavand.
Spirit. myrciæ co.
Spirit. myrist.
Stovain.
Stront. bromid.
Strophanth. semina
Succ. belladonn.
Succ. hyoscy.
Succ. scoparii
Sulph. hypochlor.
Sumbul rad.
Syr. acid. hydriod.
Syr. aurant. flor.
Syr. ferri brom.
Syr. ferri hypo. co.
Syr. ferri phosph. co.
Syr. glyceroph. co.
Syr. hemidesmi
Syr. iodotannic.
Syr. pic. liq.
Terpin. hyd.
Theobrom. sodio-salicyl.
Thus American.
Thymol iodid.
Tinct. benzoin. simp.
Tinct. bryon. alb.
Tinct. cacti grand.
Tinct. calendulæ
Tinct. carminativ.
Tinct. castor.
Tinct. cinnamomi
Tinct. convallariæ
Tinct. croci
Tinct. eucalypt. fol.
Tinct. iodi decolor.
Tinct. opii ammon.
Tinct. rhus tox.
Tinct. strophanth.
Tinct. sumbul
Trional
Troch. ferri redact.
Troch. krameriæ
Troch. sodii bicarb.
Trypsin.
Veronal
Ung. aquæ rosæ
Ung. atropinæ
Ung. belladonnæ
Ung. creosot.
Ung. eucalypt.
Ung. hydrarg. subchlor.
Ung. plumbi acet.
Ung. plumbi carb.
Ung. plumbi iodid.
Ung. veratrinæ
Vin. ferri cit.
Zinci acet.
Zinci bromid.
Zinci iodid.
Zinci oleas

New Books.

These notes do not necessarily exclude subsequent reviews of the works. Any of these books printed in Great Britain can be supplied, at the published price, to readers of this journal on application (with remittance) to the Publisher of "The Chemist and Druggist," 42 Cannon Street, London, E.C.

Adamson, H. G. *The Skin Affections of Childhood.* $7\frac{1}{4}\times4\frac{3}{4}$. Pp. 304. 5*s.* net. (Frowde.)

Atkinson, S. B. *The Office of Midwife (in England and Wales) under the Midwives Act, 1902.* $7\frac{1}{2}\times4\frac{3}{4}$. Pp. 136. 2*s.* 6*d.* net. (Baillière.)

Berry, R. M. Fletcher. *Fruit-recipes: A Manual of the Food-values of Fruits and 900 Different Ways of Using them.* $8\frac{1}{2}\times5\frac{1}{2}$. Pp. 360. 7*s.* 6*d.* net. (Constable.)

Brown, W. L. *Manual of Assaying Gold, Silver, etc.* 12th edit. 12mo. 10*s.* 6*d.* net. (Spon.)

Greene, J. *The Insect-hunter's Companion: Being Instructions for Collecting and Preserving Butterflies, Moths, Beetles, Flies, etc.* Revised by A. B. Farn. 5th edit. $6\frac{1}{2}\times4$. Pp. 128. 1*s.* 6*d.* net. (West, Newman.)

Hawk, P. B. *Practical Physiological Chemistry.* Illus. 8vo. 16*s.* net. (Churchill.)

Murrell, W. *What to Do in Cases of Poisoning.* 10th edit. $4\frac{3}{4}\times3$. Pp. 288. 3*s.* 6*d.* (H. K. Lewis.)

Sutherland, G. A. *The Treatment of Diseases in Children.* $7\frac{1}{4}\times4\frac{3}{4}$. Pp. 320. 5*s.* net. (Frowde.)

Wiley, H. W. *Foods and their Adulteration: Origin, Manufacture, and Composition of Food-products, etc.* Illus. $9\frac{1}{2}\times6$. Pp. 638. 21*s.* net. (Churchill.)

Exporting to Germany.

In a recent article we showed the difficulties which British manufacturers meet in regard to the sale of their preparations in Germany. We now deal with the provisions of the German Customs tariff and the laws regulating the sale of specialities in Germany, as far as they affect exporters of such goods. As the new tariff and laws have been working for two years, there is some definite material to go upon, but a prohibition list of secret remedies is in preparation.

The German Customs tariff is contained in two volumes, one, the "catalogue of goods," of 811 pages, is a sort of index to assist the officials to find under what division an article is classed in the tariff proper, Part IV. of which concerns us. Attached to the latter is an explanation of 314 pages, and two extras of 35 and 30 pages, giving minute particulars for the analysis and examination of certain articles, besides a large collection of tables, such as specific gravities, melting-points, etc. In spite of this, differences in the treatment of the same goods at different stations are possible, and to obviate this the central office from time to time issues reports stating how in future certain articles are to be dealt with to ensure uniformity in levying duties, this often being done after consultation with experts.

Pharmaceutical Products.

The rates quoted apply to 100 kilograms weight, the articles being weighed together with their wrappings, etc.

Balsams, real or artificial, essences, tinctures, extracts, waters, and similar preparations, not perfumed, for technical or medicinal purposes—
Not containing ether or alcohol, 2*l.*
If containing ether or alcohol, 3*l.*

This is applicable to all "straightforward" preparations, such as those according to various pharmacopœias, as long as they are not put up ready for retail sale.

Juices of fruits (excepting grapes) and of plants for technical or medicinal use—
Not containing ether or alcohol, 3*l.*
If containing ether or alcohol, they are treated as brandy, 8*l.*

Liquorice juice, with sugar, honey, aniseed oil, chloride of ammonia, or other taste corrigents, or with remedies put up for retailing, 3*l.*

Plain liquorice juice, purified or not, free.

Essential oils, to which menthol cones are reckoned, 30*s.*

Smelling salts, 5*l.*

The following syrups: Marshmallow, ipecac., chest syrup, cinchona, iron, gum acaciæ, iodide of iron, chamomile, hypophosphate of chalk and iron, opium, morphia, balsam of Peru, rhubarb, saffron, sarsaparilla, Senega, senna, and balsam of tolu, 2*l.*

This applies only to these syrups as such.

Disinfectants, containing soap, but without ether or alcohol, range from 5*s.* to 30*s.*—
Without soap, if declared as remedies, 2*l.*
Containing ether or alcohol, as brandy, 8*l.*

Beef-tea, in air-tight tins, 3*l.* 15*s.*

Sanitary towels (under finely woven cotton, etc.), 17*l.* 10*s.*

Baby foods, made of flour, with the addition of—
Sugar or condensed milk, 3*l.*
If in air-tight tins, 3*l.* 15*s.*
With cocoa or chocolate, 4*l.*

Pastilles (lozenges) to be used as remedies—
Containing cocoa or chocolate, 4*l.*
Without cocoa or chocolate, but with sugar, honey, etc., 3*l.* 10*s.*
Without cocoa or chocolate, or sugar, honey, etc., 2*l.*
If perfumed, 5*l.*

All chemical foods, *free*.

Alkaloids and their salts, *free*.

Chloroform and chloral hydrate, 20*s.*

Bromoform and iodoform, *free*.

Prepared medicines—
Not containing ether or alcohol, 2*l.*
If containing ether or alcohol, as brandy, 8*l.*

[Under this heading come all kinds and forms of pharmaceutical preparations of any description, put up ready for retailing, intended for preventing, alleviating, or curing illnesses of man or beast, but only in so far as they do not come within the meaning of the "ominous secret remedy." In the eyes of the German law and of the Custom House a preparation is considered a secret remedy:

If the exact formula is not given on the receptacle itself so that the purchaser may be thoroughly aware of the contents. (A declaration on the Customs papers alone is not sufficient.)

A slight concession has been made in favour of "old-established remedies that have been recognised by the medical profession," which then come under the class of prepared medicines, but the difficulty lies in producing the required proof, especially when other attributes of a secret remedy are present.

If the price charged is out of proportion to the value of the contents, *i.e.*, higher than if reckoned out according to the medicinal tariff.

If the preparation contains any poisons which prevent it being sold except upon a doctor's prescription. (There exists in Germany a list of powerful drugs, none of which may be sold to the public as a remedy.)

Where any one of these provisions is applicable, the article in question, be it disinfectant, syrup, lozenge, plaster, liquorice juice, or other form of speciality, is mulcted to the extent of 25*l.* per 100 kilo.

In many respects the English manufacturer is placed at a great disadvantage. To comply with the regulations would mean parting with the secret of the true composition of his preparation. To the German apotheker such a step does not mean so much: the repeated analyses that his preparations are subjected to by solicitous authorities or private bodies and the publication of the results make those interested perfectly acquainted with the nature of the article they handle. In the case of English specialities one has to rely upon data given by German analysts. The manufacturer may also spare himself the trouble of wrapping up with his preparation a pamphlet setting forth in glowing terms its many virtues; it will only be ruthlessly thrown away by the retailer, for he is forbidden to sell a remedy on the label of which or on its wrappings, recommendations, testimonials of cures effected, thanks, or the healing or curing propensities are set forth.

Toilet Preparations.

With regard to cosmetics, the terms are much more clearly drafted, and there is here scarcely any room for doubt left. The following are the rates per 100 kilos.:

Perfumed fats, ointments, pomades, fatty or mineral oils—
Less than 5 kilos., 5*l.*
5 kilos. or over, 20*s.*

Perfumed waters, not containing ether or alcohol—
Less than 5 kilo., 5*l.*
5 kilos. or over, 20*s.*

Powders, face-paints, tooth-powders perfumed, tooth-soap, fumigating-paper, papier-poudré, and all other not otherwise enumerated articles of perfumery and beautifiers, 5*l.*

Powders and face-paints and tooth-powders not perfumed, 16*s.*, but if on their coverings their use as a beautifier is stated, they are classed as cosmetics and charged 5*l.*

Face-paints on cards, tin sheets, &c., put up ready for sale, 20*s.*

Perfumery, cosmetics, hair-dyes, skin-beautifiers, hair-washes, mouth and tooth waters, essences, tinctures, waters, and aromatic vinegar all containing ether or alcohol, 15*l.*

Artificial perfumes, 4*l.*

Tooth-brushes—
Wood, cane, or iron, 24*s.*
Bone or horn, 5*l.*
Ivory or tortoiseshell, or imitation of either, 12*l.* 10*s.*
Celluloid, 10*l.*

Perusal of the foregoing will convince the intending exporter that the terms of this truly protective tariff make it an impossibility for him to compete successfully against similar preparations in Germany. There is only one way to obviate this, and that is by sending over the preparation in bulk and putting it up in Germany, or even to prepare it on German soil. To bring home the fact that in reality at least half of the duty is paid upon the receptacle and not upon the preparation itself, the following examples will suffice:

A bottle of Guy's Tonic No. 1 size weighs 365 grams, and the duty to be paid upon it as a secret remedy is 1*s.* 10*d.* The weight of the contents of a bottle was found to be 175 grams, which in this case means a duty of 11*d.* The empty bottle weighed 183 grams, which meant that 10½*d.* duty was paid on the bottle alone, and for the wrapper a halfpenny.

The following are the figures for Koko, in the first case considered as a cosmetic containing alcohol, in the second without. Weight: 760 grams, duty 2*s.* 3½*d.*, or 9½ pence. Contents: 340 grams, duty 1*s.* 0¼*d.*, or 4 pence; the empty bottle weighs exactly as much, consequently costs as much as the contents. The duty, however, on empty bottles ranges from 8*s.* to 36*s.* per 100 kilos., in the latter case for "gilded or painted" ones.

Summer Supplements.

Some particulars in regard to the Price Lists, Circulars and Brochures inserted in this Summer Issue of "The Chemist and Druggist" as insets.

MANY years ago, when The Chemist and Druggist was published monthly, we commenced the practice of receiving circulars and price lists prepared by advertisers for insertion in certain issues. This proved a most effective method of advertising, particularly so since The Chemist and Druggist became a weekly publication, and two issues of the journal yearly have been reserved for insets, namely, the Winter and Summer Numbers.

Our method of distributing such insets ensures that they get into the hands of good buyers, it being well proved that readers of The Chemist and Druggist are business men, who regard it as a buying medium. The artistic character of such a number as the present one ensures that it will be filed amongst the business books of buyers to be taken down as frequently as there is occasion for the purpose of filling orders. With that object in view, we have pleasure in calling the attention of our readers to the series of beautiful insets which are placed in this issue. It will pay everyone to read these and to note what may be added to their stocks in order to make new business, which is wholly the tendency of the times in pharmacy and the drug trade, as well as in every other class of business connected with shopkeeping. The continuous introduction of novelties to customers is one of the surest ways of keeping up returns and increasing them, and the man who has this practice amongst his uppermost ideas has a stimulus to enterprise otherwise unattainable.

We now append the briefest possible descriptive notes on the insets, indicating by pages or otherwise where they are placed in the issue, and for the benefit of advertisers we may state that the next occasion on which insets will be received for insertion in The Chemist and Druggist will be for the Winter Issue to be published on Saturday, January 25, 1908.

Allen & Hanburys, Ltd., London,

entrust us with the distribution of one of the handsomest illustrated price lists extending to eighty-four pages and cover. This deals with packed drugs, perfumes, and toilet-soaps, and is the fourth edition of their revised series. It appropriately begins with a condensed list of packed drugs and medicinal and toilet preparations, showing sizes, prices, and the pages upon which the articles are illustrated and more fully described. Then follow forty pages of such illustrations and descriptions, another eighteen pages are devoted to perfumes and toilet-preparations, and the list concludes with illustrations and descriptions of the manner in which Allen & Hanburys' toilet-soaps are put up for retail. Inquiries respecting the goods may be addressed to the headquarters of the firm or to one or other of the branches, but application for samples should, to be treated most promptly, be sent to headquarters at Bethnal Green, London, E. The list is *inserted loose*, and our readers are specially requested to retain the list for future reference, as they will observe it is a valuable production and deals with a profitable branch of business.

Baiss Bros. & Stevenson, Ltd., Jewry Street, London, E.C.,

insert a list of chemicals, essences, and other preparations, including ether, for the use of manufacturers of aërated beverages and the production of ice. They give in the list sent to Colonial and foreign buyers special terms for chemicals, drugs, and pharmaceuticals generally, and devote a page of the circular to their "latest triumph in pharmacy," a compound syrup of prunes. A sample bottle of this will be sent free of charge to any of our readers. Particulars of "Othniel," "Krysyl," and "Pinesyl" specialities are also included in the list. The circular inserted in the home edition also gives particulars of several of the firm's specialities with illustrations, such as compound elixir damiana, cod liver oil emulsion, citrate of lithia tablets, syrup of figs, sandal-wood oil and other capsules and Carlsbad salt (pp. 32-33).

Beck & Inchbold, Ltd., Basinghall Street, Leeds,

give our readers a very artistic example of their colour-printing as an introduction to their facilities for designing and executing all kinds of advertising and trade printing. They particularly call attention to their Daily Day Calendar, of which a representation is given on the back of the inset. They invite inquiries for samples and prices either to their headquarters in Leeds or to their London office, Clun House, 17 Surrey Street, Strand, W.C. The inset will be found between pp. 64 and 65.

P. Beiersdorf & Co., 7 & 8 Idol Lane, London, E.C.,

describe in their inset a number of articles made according to Dr. P. G. Unna's formulæ, including "Pebecol," a chlorate-of-potash toothpaste. The inset, however, is chiefly devoted to a price-list of the "Pilot" brand of plasters made by the firm. They include corn-plasters, porous plasters, rubber adhesive court-plaster, and medicated plaster in a number of forms, which are described. It may also be noted that "Lenkoplasts" is the name of white adhesive rubber plaster containing zinc oxide, which is supplied on spools in an aseptic package. Inserted between pp. 158 and 159.

H. Bronnley & Co., Ltd., Warple Way, Acton, London, W.,

have made the hit of the season with Courvoisier's Otto of Violets, a remarkably natural and strong floral essence, which has received wide praise and has established itself as an indispensable addition to the toilet in daily demand. The inset in regard to this perfume is so printed that it may be used by retailers as an attractive showcard, and prices are given on the back of the circular, viz. 13*s.* 6*d.*, 26*s.*, 50*s.*, and 94*s.* per doz. net, subject to drawback on export of 2 gal. (proof) lots (pp. 32-33).

Brunner, Mond & Co., Ltd., Northwich,

devote their circular to instructions for using bicarbonate of soda in making mineral waters. A quarter of a century ago the idea of using this bicarbonate in place of chalk as a source of carbonic acid gas was chimerical, but, thanks to the laborious researches of Dr. Ludwig Mond in the establishment of the Solway process in this country, the initial stage of the manufacture of alkali is substantially the fixation of carbonic acid with the sodium atom, consequently sodium bicarbonate is the first product of the process instead of the last, as in the old Leblanc method, and the firm are, therefore, able to supply a 2-cwt. bag of bicarbonate of soda for 10*s.* Those who have not yet used it for aërated waters should place such a sample order with Messrs. Brunner, Mond & Co. The inset is between pp. 158 and 159.

James Burrough, Ltd., Cale Street, Chelsea, London, S.W.,

devote their inset exclusively to spirits and wines. They are distillers of S.V.R., B.P., and other strengths, as well as methylators, and are manufacturers of "Red Cross" whisky. They offer a series of chemists' wines, including sherries, port, and such medicated wines as quinine, meat, and malt. Samples and quotations for these will be sent to any reader of The Chemist and Druggist on application (pp. 158-159).

W. J. Bush & Co., Ltd., Ash Grove, Hackney, London, N.E.,

made such effective use on a previous occasion of their design showing that "Bush's Soluble Essences Excel" all the world over that they repeat it with some fresh particulars in regard to essential oils for medicinal and similar purposes, they being distillers of all that are mentioned in the British Pharmacopœia. They invite inquiries from users of these. Inserted between pp. 32 and 33.

Butler & Tanner, Selwood Printing Works, Frome,

have something to say to our readers in regard to catalogue printing. This firm's name is familiar to chemists in the United Kingdom as the printers of the "Year-book of Pharmacy" and other works connected with the drug trade. Of recent years they have extended this connection by the execution of printing for wholesale and retail chemists. They are willing to send specimens and prices to any chemists who write to them mentioning The Chemist and Druggist as the source of their information (pp. 64-65).

Arthur H. Cox & Co., Ltd., Brighton,

describe and illustrate in their inset a selection of compressed tablets and pills, which are most popular at the present moment in the retail trade either at home or abroad. For example, they quote for sixteen different kinds of compressed tablets in lots of twelve dozen assorted, or in bulk quantities of 1,000 tablets. We also notice amongst the illustrations capsulated hæmoglobin for the growth of the hair, stomach and liver beans, pine pellets, Blank's cold cure, and other attractively packed lines. Pills made according to official and other approved formulæ are also quoted for in bulk quantities. The list is crimson and is placed between pp. 126 and 127.

The Erasmic Co., Ltd., Warrington,

make our Summer Issue the opportunity of thanking their many friends for going to see them at Warrington on Friday of this week, when large parties left Euston and Manchester to see how soap is manufactured in Messrs. Crosfield's works, where also Mr. Tyrer's expressions in regard to research in this country are in the concrete. The principal object of the company's circular is to show how effective are the window-displays of Erasmic soap, as to which particulars may be obtained from the company on application. The circular also gives particulars about the "Duchess" and "Mikado" 2*d.* toilet-soaps, specimens of which are offered. The inset is between pp. 64 and 65.

William Gardner & Sons (Gloucester), Ltd.,

the well-known engineers and manufacturers of sifting and mixing machinery, insert a descriptive and illustrated list of a considerable number of such machines which are specially suited for druggists' use and for manufacturers of granulated chemicals. Besides such machinery, Messrs. Gardner describe and illustrate grinding-mills, stone-mills, sieve separators, and in the final page of the inset show diagrammatically the construction of their "Rapid" sifter and mixer. See between pp. 64 and 65.

George W. Harrison, of Reading,

is the manufacturer of the "Reliable" nursery pomade, which retails at 4½*d.* and 9*d.* per tin, and as a P.A.T.A. article yields a profit of 50 per cent. He makes other "reliable" articles, and a complete list of them is printed on the inset, the P.A.T.A. retail and wholesale prices being included (pp. 158-159).

C. J. Hewlett & Sons, Charlotte Street, London, E.C.,

send to our colonial and foreign readers a dainty four-page price-list, the cover of which contains beautiful coloured facsimiles (reduced) of artistic cartons in which some of their counter-specialities are enclosed. Similar productions in black-and-white are also given, one page being wholly devoted to "Malto" preparations. These make an informative accompaniment to the condensed and abridged list of packed drugs, etc., to suffice for a sample order.

Hockin, Wilson & Co., New Inn Yard, Tottenham Court Road, London, W.,

place in the copies of this issue for home distribution a four-page condensed price list of some of their products. The firm are well-known as the makers of the "Acme" brand of menthol cones, but they quote for other products in druggists' sundries as they are specialists in chemists' "wants," such as the packing of medicinal and toilet preparations and perfumes. They are agents for French soaps manufactured by Messrs. P. Tranoy & Co., and a list of these and other specialities will be found in the inset, which is between pp. 32 and 33.

Samuel Jones & Co., 56 Carter Lane, London, E.C.,

insert a sample of their patent non-curling gummed paper with the special object of bringing it to the attention of our readers in order that they should specify this paper the next time they order gummed labels. They say that it is as natural for their gummed papers to lie flat as it is for ordinary gummed paper to curl, and certainly there are no better judges of that than the chemists to whom we commend this article. It is between pp. 32 and 33.

McKesson & Robbins, 91, Fulton Street, New York, U.S.A.,

again submit to our readers at home and abroad a concise formulary of their capsuled pills, and on this occasion, we observe, interesting notes are attached to the more important preparations. The firm also announce that large reductions are being made in the list-prices of these pills, for which the London agents are Messrs. S. Maw, Son & Sons, 7 to 12, Aldersgate Street, E.C. The last page of the circular is devoted to Calox, the oxygen tooth-powder, which is almost literally in everybody's mouth in the United States, no modern dentifrice, we understand, having so quickly attained popularity as this Calox, the British depôt for which is under the charge of Mr. A. C. Wootton, 14 Trinity Square, Tower Hill, London, E.C. (pp. 126-127).

A. & F. Pears, Ltd., New Oxford Street, London,

are soap-makers by Royal warrants to H.M. the King and H.M. the Queen. Their circular is devoted exclusively to the retail prices and trade terms of their soap products, which even at cut rates can yield the retailer a profit such as is recognised to be fair for soaps. It is an article which requires no pushing, being the best advertised soap in the world, and Messrs. Pears invite our readers to apply for show cards and other advertising material as well as for the full price-list. We may in this connection recall the fact that the first European pharmacy fitted up in Khartoum is decorated most effectively with the Pears Hygiea cartoon, the picture which artists agree is one of the most effective designs in mural advertising (pp. 32-33).

The Postlip Mills [illegible]

present to our readers samples of white and grey English filter-papers and a sample of best seidlitz blue-paper, which is self-coloured and is not affected by acids. The manufacturers of these English products invite chemists to place sample orders for them with any sundries-house (pp. 126-127).

Price, Powell & Co., Potteries, Bristol,

are the makers of an air-tight stoneware jar, which is excellent for keeping many drugs. They give prices for various sizes of this jar up to six gallons in capacity; the smaller size may be used for tobacco, and the larger are suitable for many purposes in pharmacy, including mascerations, and stocking volatile

substances, such as camphor. The accompanying illustration shows one of the three forms of the jars. The firm are also manufacturers of Tripoli porous stone filters, hot water bottles, and the like (pp. 126-127).

Quibell Bros., Ltd., Newark,

are well-known to the trade as manufacturers of disinfectants and agricultural preparations, such as sheep-dips.They have recently introduced a new disinfectant under the name of "Kerol," and they invite our readers to acquaint themselves with the qualities of this, which not only yields an excellent profit on sales, but being a standardised germicide gives satisfaction to medical practitioners and sanitary authorities. Messrs. Quibell Bros. give each of our readers a copy of a pamphlet describing Kerol, in the course of which they give an account of the testing of disinfectants, and the present position of germicidal standardisation of such preparations, besides full instructions for the use of Kerol in connection with infectious diseases and general sanitary purposes, as well as the disinfection of kennels, poultry-houses, stables, &c. Inserted between pp. 64 and 65.

Rudduck & Co., 262 Old Street, London, E.C.,

are shopfitters and shop-front builders, who give special attention to the requirements of chemists and druggists. In a two-page inset they illustrate a plate-glass counter-case, a chest of drawers, desk with perfumery show-case, chemist's counter, wall-cases, and a small dispensing screen (pp. 158-159).

The Standard Tablet and Pill Co., Hove,

have entrusted us with the distribution of a "little transaction with Boots." This starts with the cash-bills of four purchases from that well-known company, and takes the chemist on to the prices at which similar goods made by the Standard Tablet and Pill Co. can be purchased by the chemist and sold at prices which show from 33 to 386 per cent. profit, or an average of 150 per cent., whereby, it is explained, "if the ordinary retail chemist buys his goods in the right market he can hold his trade profitably against all competitors." Illustrations of the packages in which the Standard Co. send out their goods are given, and the inset concludes with the balance-sheet of a smart London retail chemist, who in twelve months made 503*l*. out of these tablets. Inserted between pp. 126 and 127.

Stevenson & Howell, Ltd., Standard Works, Southwark, London, S.E.,

have a high reputation amongst our readers as artistic advertisers. They go upon the principle that as high quality and finish are the characteristics of their soluble essences for the production of aërated beverages, so nothing but the best in the way of advertising is good enough for them. Their inset in this number bears on the front page a happily-conceived portrayal of an old town crier, whose background is a quadrangle of old-fashioned cottages. On the other side of the inset prominence is given to a picturesque sketch of Old Father Time holding up the standard of the Red Ball Brand, which is the trade-mark of Messrs. Stevenson & Howell's fruit and soluble essences and essential oils. Colonial buyers and manufacturers are doubtless aware that these products are very largely exported (pp. 64-65).

The Wand Manufacturing Co., Leicester,

whose removal to new premises we recently noted, give on the first page of their inset a view of the premises. These are devoted to the manufacture of pills, tablets, capsules, etc. A brief list of popular pills in bulk quantities and boxed or bottled ready for retail is given on the second page of the inset, and on the third are pithy testimonials and notes about the Wand Manufacturing Co.'s products, while the last page is devoted chiefly to tablets, flexible gelatin capsules and perles, as well as horse-balls, pills, and several quick-selling lines in domestic medicines manufactured by the company (pp. 126-127).

William R. Warner & Co., of Philadelphia,

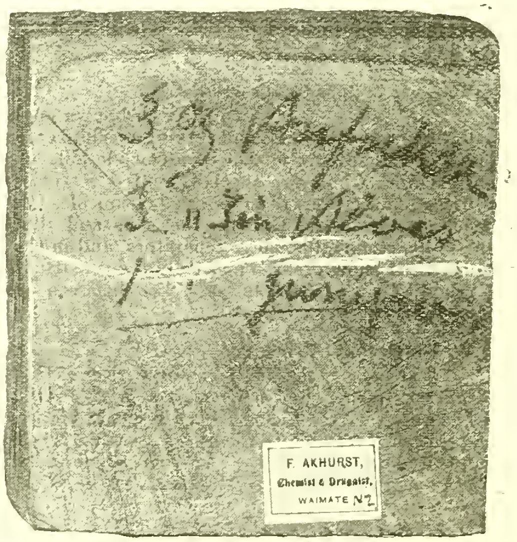
whose agents in this country are Messrs. F. Newbery & Sons, Ltd., Charterhouse Square, London, E.C., insert a price-list in which retail packages of pills and tablets are printed by the three-block colour process so as to faithfully represent the originals. The inset is one of the most artistic in the Summer Number, and is also interesting, a brief monograph of the progress of the pill prefacing the price-list and formulary of some leading soluble coated pills, particulars also being given of a tablet series, effervescing lentiforms, and the more important elixirs, etc., produced in the Warner factory at Philadelphia. The novelties described include "Zanphenyform," an intestinal astringent and antiseptic, which is supplied in capsules and in powder form, the latter in 1-oz. boxes. The list is inserted between pp. 32 and 33.

Wilkes & Co., 88 Walworth Road, London, S.E.,

are modern printers who have the knack of adding to careful writing of advertisements additional effectiveness by the manner in which they set up the matter. The specimen they give of imitation typewriting will appeal to many in the trade, and those who find it advantageous to use "form letters" in promoting business, collecting accounts, and the like, will be glad of the opportunity of seeing how this more personal form of advertising is done by Messrs. Wilkes, whose circular in other respects is interesting reading. Inserted between pp. 64 and 65.

At the Counter.

One of the most curious orders that any of our subscribers has received is reproduced in the subjoined engraving, which was received by us from Mr. F. Akhurst, chemist and druggist, Waimate, N.Z., and was written on a block of wood 4 in. wide by 4¼ in. deep and 1 in. thick. We have had this photographed, and the pencilled writing comes out a little more distinctly than in the original.



Mr. W. Ault, of Georgetown, B.G., sends us a bundle of cosmopolitan requests from the varied community of our South American colony. We give the originals to the left and what was wanted to the right :

Eating congou occum	Gum guaiacum
Eating soda	Sodium bicarbonate
Honis ol	Aniseed oil
Lyrch'sh	Liquorice juice.
Tortoric osside.	Tartaric acid
Verula	Vanilla.

Asked for at the counter to-day :

"It begins with fin and ends with tin, it's something for neuralgia." Phenacetin supplied.—J. G. Twigg (Withernsea).

OUR TOWN TRAVELLER

Finds the leading houses busy, thanks to the hot weather of last week and the presence in London of many Colonial visitors.

A RUN through several of the City showrooms, a hurried chat with the heads of departments, and a general glance round revealed the fact that business is undoubtedly "on the boom." The cold weather that only gave place to summer a week ago has kept back the "season" trade considerably, and complaints from seaside chemists and summer resorts have been dire and deep. But the sun has brought with it, as it generally does, new life and a *joie de vivre* which is reflected in brisker business. Wherever I have gone recently I have been told that business is decidedly good, and the evidence of my own eyesight quite corroborates that statement. In almost every business house I found the departmental head perspiring but happy, and bearing that look of resigned cheerfulness which betokens that all is as well as may be. A walk back through

City Sundries Houses

may be taken as typical of the whole. At Maw's I discovered Mr. Arthur Maw busily engaged booking orders in the toilet-goods department from a party of well-dressed Japanese. Mr. Leng, in the export department, could only murmur a polite "How do you do, Mr. Chemist and Druggist?" and resume work on the pile of papers in front of him. He certainly appeared in that happy state appreciated by the business man of "not knowing what to do first." In the showroom of Evans Sons Lescher & Webb, Ltd., I dropped in upon Mr. T. Edward Lescher in shirt-sleeves, busy with a representative of the house on the eve of departure for the Mediterranean. While I waited, three customers from abroad, or from the provinces, sauntered in, and I went out with a promise to call later. At Lynch's, in Falcon Square, I noted the buyers in each showroom, and found Mr. Winter closeted with a foreign client. I wandered round to Newbery's and found three representatives in the showroom all busy explaining the novelties to prospective customers. Still further on I discovered that Mr. Roberts, of May, Roberts & Co., was busily engaged with a client, and that his interview would probably last an hour. This seemed to point to business; so I did not obtrude myself upon the notice of the genial and eloquent head of the famous sundries house, but left him and his client a fair field and no favour. I have no doubt that as a result of the interview both would be pleased. In the warehouse of Spurway et Cie. Mr. Marks was busy, complaining only of a slight discomfort from a high temperature, but he had no complaint to make as to business. At Christy's, in Old Swan Lane, Mr. Richardson's reply to my stereotyped inquiry was "Very busy, indeed," and he and the staff looked it. With regard to the

Actual Novelties

which I observed in the course of these cursory visits, I noted in Newbery's the "Vade Mecum" comb-case, a screen-like book for the display of dressing combs. It is after the postcard-album pattern and holds two dozen dressing-combs, all sizes, to retail at from 6*d.* to 2*s.* The price of the case filled is 15*s.* and empty 2*s.* 9*d.*, cloth being fixed to drape over and keep the combs free of dust and from injury by rubbing against one another. The "Baby's toilet box" has caught on so well that two smaller sizes have been added. Each of these, like the original half-crown size, contains a box each of fullers' earth and of violet powder, a puff, comb, and brush, the only difference being that the sizes are smaller and the prices lower—2*s.* and 1*s.* 6*d.* retail respectively. A smaller size even, to retail at 1*s.*, is in contemplation. "Wooletta" is a novelty in toilet-paper introduced by Messrs. Newbery. It is a thin sheet of cottonwool attached to a piece of paper, and is specially recommended in cases of burns, chafing, anal irritation, piles, etc. "Wooletta" is put up in packets of fifty pieces, costing the retailer 48*s.* per gross. For gross quantities the chemist may have his name and address printed free on the wrappers. Chemists who have developed the toilet part of their business and who are noted for their shaving brushes, will find the show-case for razors a profitable investment. The case shows five razors on a red velvet background, and the whole thing with the dozen razors (three at 1*s.* retail, three at 1*s.* 6*d.*, three at 2*s.* 6*d.*, two at 3*s.*, and one at 5*s.* 6*d.*) only costs the retailer 15*s.* 6*d.* complete. At Evans Lescher's, in Bartholomew Close, the latest productions include tablet triturates of morphine, atropine, cocaine, etc., for hypodermic use in tubes of twelve, costing the retailer 3*s.* 6*d.* per dozen. The advantages claimed for these are that they are easily soluble, and accurate in dosage. Dry-filled capsules in boxes to retail, in bottles and in bulk, are also in demand, while a new method of manufacturing gelatin capsules (for santal oil, etc.) has lately been put into use, the finished capsules being particularly bright and well-shaped. Saline bottles may now be had with cup-corks (each cup a dose) for 6*d.* a dozen extra, and there is a big range of Hawley salines to choose from. "Massage cream" made by the Swan Toilet & Perfumery Co. (Thomas Christy & Co., Ltd.) is apparently going well. It is well made and nattily put up, and the smart little aluminium easel show-cards sent out with it will help to make it go even better. It is P.A.T.A. protected at 1*s.* 3*d.* retail, and the cost is 9*s.* per doz., so that a good profit is assured. Speaking of showcards, smaller sizes of the "Zepto" pencil showcards are now being sent out with three-dozen quantities of the well-known tartar-remover. Big orders of "Zepto" from China, Japan, and India show that Orientals, whose teeth are usually the object of envy to Westerners, appreciate the value of this toilet article. Nail-polish, in nickel cases, labelled, and mounted twelve on a card, is now put up to cost 4*s.* 6*d.* per doz.; a finer variety is packed in celluloid cases to retail at 1*s.* (cost 8*s.*). Other Christy novelties are White Violet tooth-powder, Peppermint tooth-powder, and a carbolic tooth-powder (Rampant Lion brand, particularly appropriate for North Britain). These powders are all packed in nicely-decorated tins of different designs, the costs to retailer being 1*s.* 9*d.*, 1*s.* 6*d.*, and 1*s.* 2*d.* per dozen respectively. Moreover, with every gross order two easel display boxes are sent free.

Toilet-soaps.

I motored (by bus) down to Bow one day last week, and inspected some of the latest creations in toilet soap of Messrs. Edward Cook & Co., Ltd. I discovered that the well-known "Throne" soap has been much improved in packing. Incidentally, the perfume used in the manufacture of the soap has been slightly changed, but the wrapping of each tablet is the main difference. The cake is first wrapped in gold lettered tissue paper, then round this is a neatly folded perfumed serviette of Japanese paper, and lastly the well-known decorated outside wrapper, with seal. The introduction of the serviette is novel, and is fully appreciated by careful housewives. "Cutaneous Soap"—an ichthyol and boric-acid soap—is now packed as Cook's brand, and the price is "protected," like all of the "Cook" branded soaps. A box of three tablets costs the chemist 10*d.*, and the F.M.R. price is 1*s.* 5*d.* Messrs. Cook have always been very strong on chemists' "own-name" goods, and they are always ready to supply a chemists' speciality in the best style and at any price from 7*d.* per box of three tablets upwards. Stock lines, for which a customer can choose any other name he fancies, include cream, cold cream, violet, rosaline, sulphur, violet-scented oatmeal, white lilac, benzoin, and cream of lilies soaps. Some of the stock-boxes for these are very smart, but they may be procured any colour or design to customer's order. All that Messrs. Cook ask is that the chemist should give them an idea of what he wants, the name, etc., of the soap, and the price he desires to pay; they will do the rest. "Riviera Violets" and "Riviera Elite" still go strong, and among other lines which chemists are buying well this season are coal-tar and oatmeal ("Coolarma" brand), the "Bungalow" series—a specially good and inexpensive line (1*s.* 7*d.* per doz.), which sells very rapidly. The "Solace" shaving-stick in its new container of imitation oxydised silver—a 9*d.* line, which costs 4½*d.*—has proved a great success. A series of twopenny soaps in two dozen different odours are always on hand for chemists to select from, special moulds being kept for each chemist. These may be ordered in ¼ gross quantities, provided the customer has a plate; but the cost of a few shillings for a special mould for his private use would not deter any enterprising chemist. Many elegant show-cards, framed or otherwise, are sent out by the Bow soap-specialists, and chemists when ordering should inquire about the latest attraction in this line.

F. Schutze & Co.

A few months ago Messrs. Schutze began a northward migration. The premises in Southwark Street on the south side of the Thames became unsuited to the growing business, and, although the selection of a site for the new works was somewhat difficult, the Black Bull Works, Caledonian Market, N., was the outcome. The Caledonian Market is the famous market in the North of London where horses, cattle, and other goods are sold; it occupies a site of several acres. In the centre is the square clock-tower, which is a landmark for miles round, while at each of the four corners there is a large square solid building designed as an hotel. Three of these are devoted to their original use, but the fourth was not a success as an hotel. It is this last-named building which has been acquired by Messrs. Schutze & Co. and fitted up as offices and store-rooms, while at the back a factory has been built in which are made trusses, bandages, bathing-caps, washing-gloves, and the like. The removal has been a trying time, as it is no light task to reorganise and remove the various departments and still attend to the daily business. As those acquainted with London will appreciate, the distance from the old premises to the new factory is considerable. I called at the Black Bull Works one day during the last week, and found that the various departments have settled down into the normal working. In a chat with the manager (Mr. Wylde), I learned that the hot weather has made the sale of bathing-caps, sponge-bags, and "Father Neptune" safe floats go up with a jump. Seaside chemists who had almost despaired of any season have been brightened with the sudden spell of summer sunshine, and are hastening to meet the demands of the rush of visitors. A show-room has been fitted up where visitors may inspect specialities. As I was leaving I was reminded that advertising-displays for the window, which originated with Messrs. Schutze, are still available and in improved form. "You might also tell your readers," said Mr. Wylde, "that the leg-models which we send out to advertise Dr. Levett's elastic hose have been found by chemists to be a capital means of working up a business in elastic stockings."

Parke, Davis & Co.

I looked in at 111 Queen Victoria Street, E.C., to see what progress is being made with the move westwards, but I found that the final plunge is not to be made till September. At present attention is being given to the details of the fitting up of the new premises, which I must defer till another occasion. The firm are also erecting an addition to their laboratory at Hounslow. It is a building of three stories, 180 ft. by 50 ft., and has been rendered necessary by the great increase in the European business. My attention was called to a series of booklets which give in handy form all that is known regarding certain new medicaments and methods. The information is conveyed in a condensed form, but is eminently practical, the formulæ enabling the dispenser to make up the necessary mixtures or solutions for the use of the medical man. One of the booklets, entitled "A Dental Manual," is excellent and contains a fine collection of therapeutic suggestions which every chemist, and especially those who extract teeth, will find useful. The titles of the other booklets are "Hypodermic Medication," "Local Analgesia," "Chloretone," and "Serum Therapeutics."

I had heard somewhat of the products of the

Haliflor Company

in the course of my wanderings, so I called at 9 Mincing Lane, E.C., the other day and interviewed Mr. Hertz (of Hertz & Co., the Company's agents) on the matter. Mr. Hertz was enthusiastic, and overwhelmed me with the profusion of products he displayed for my inspection. Besides the perfumes and soaps already referred to in the *C. & D.*, there are varieties covering a range of twenty-nine different kinds of perfumes, "Bouquet Favori," "Bouquet Medidonal," and so forth, the features being originality in the designs of the bottles, attractiveness in labelling, decorating, and packing, and above all big value for the money. All prices ranging from 3*s.* 6*d.* per doz. upwards for bottled perfumes are to be seen, and the quaintness and "newness" of the bottles is especially notable. Caskets for Christmas trade are likewise worthy of inspection. There are a "Sporting" series that is very attractive, and several new designs in jewel-cases. The range of toilet soaps is very large and the prices are somewhat astonishing. The soap series to match the three perfume specialities are perhaps the most elegant, but there is little to choose between these and "Lilas de Perse," for instance, which is very *chic.* "Violette de San Remo," "Vierlando," "Diadem," and "Initial," and other "Haliflor" brands of soap. The last-named has the initials of the retailer embossed in monogram on each cake. Moreover, Mr. Hertz has a book of original designs in labels and wrappers from which a fastidious customer who orders four-gross quantities may choose.

Trade Notes.

"Iron Ox" has now been registered as a trade-mark, the owners being the Iron-Ox Remedy Co., Ltd., 20, Cockspur Street, Trafalgar Square, London, S.W.

Sal Hepatica is the name given by the Bristol-Myers Company, of Brooklyn, N.Y., to a corrective and laxative preparation which they have designed as an eliminant of irritating toxins resulting from fermentation or decomposition of food. It is reputed to afford prompt relief in stomachic and intestinal indigestion, as well as in the summer diarrhœa of adults and children.

"Fructisine."—This is the name given to a new remedy for rheumatism, which is placed on the British market through the agency of Messrs. C. R. Harker, Staff & Morgan, Ltd., Emmott Street, Mile End, London, E. It is stated to be a highly concentrated solution of organic acid obtained from such fruits as strawberry and wortleberry. It is put up in one size only to retail at 11*s.* per bottle net, and wholesale at 9*s.*

Acidol is the name of a substitute for hydrochloric acid. It is presented in a solid form. It is betain chloride obtained by a process described by Dr. F. Ehrlich, and is given in doses of 7½ and 15 gr. It is recommended by Dr. Robert Flaton, of Berlin, in certain disorders of the digestion, and is also combined with pepsin in the form of acidol pepsin. Messrs. Charles Zimmerman & Co., 9 & 10 St. Mary-at-Hill, London, E.C., are agents for it in this country.

The Mighty Atom.—The Mighty Atom Co., 370 Walworth Road, S.E., have recently introduced, under the name of the "Mighty Atom," a small compressed pink-coated tablet, put up in bottles of 36 to retail at 1*s.* 1½*d.* and 84 at 2*s.* 6*d.* The "Mighty Atom" has, we understand, met with favour as a remedy for various complexion ailments, as well as constipation and hæmorrhoids, and the put-up is worthy of the attention of our readers.

Hill's Antiseptic Shaving-powder is a novelty which should sell very readily, particularly at this season of the year. All that one has to do is to sprinkle a little of it from the container on to the soap-brush and it makes a splendid lather. It also serves the purpose of ordinary toilet soap. It is made by the Elité Toilet Co., 84 Park Street, Birmingham, who invite our readers to write for a list of specialities, and they will send a 6*d.* sample tube to any of them on receipt of four stamps.

Catalogue of Tobacco Goods.—Messrs. Singleton & Cole (Lim.), 11-16 Cannon Street, Birmingham, the well-known manufacturers and importers of tobacco, cigars, &c., have just issued an exceedingly comprehensive and illustrated price list of their goods, extending to 228 pages, which includes all proprietary goods in the tobacco line, besides the firm's own manufactures. Chemists who deal in tobacco should write to them for a copy of it, which they will send on application.

"Exchange" Sample Case.—Mr. Thomas Keane, 64 and 66 Worcester Street, Birmingham, is the manufacturer of this case. Wholesale houses, manufacturers, and others who have occasion to send out samples of their products either by travellers or to customers will find it worth looking into. The cases are well made of cowhide leather, and are obtainable in all sizes, from one containing 16 glass tubes, which costs 7*s.* 6*d.*, up to cases containing eight trays with compartments for 84 tubes, costing 27*s.* 6*d.*

Glyco-thymoline Eye-bath.—Messrs. Thomas Christy & Co., Old Swan Lane, London, E.C., bring to our notice a small aluminium eye-bath manufactured by the Kress & Owen Co., New York, makers of glyco-thymoline. The little vessel is a miniature bath which just fits the eye comfortably, and holds about 3 drachms. The bath is supplied to retailers at 37*s.* 6*d.* per gross, each being enclosed in a small carton with directions. One advantage of the bath is that it can be easily sterilised by means of hot water.

Messrs Scott & Bowne, Ltd., Farringdon Avenue, London, E.C., have just been appointed purveyors of "Emulsion Scott" to the Royal Family of Spain. We understand that the Prince of Asturias has already made the acquaintance of this preparation, and the result is that a royal grant has been made to the manufacturers. The reports in some of the daily papers on Wednesday that the inventor of Scott's emulsion is dead are quite erroneous. Mr. A. B. Scott is in very good health, and is residing in Geneva at present. The Dr. Henry Scott whose death was reported was in no way connected with Scott's emulsion.

Buxton Liver Salt is a new product from the laboratories of Messrs. Hearon, Squire & Francis, Ltd., 38 Southwark Street, London, S.E., in which the principal medicinal constituents of the Buxton waters are combined with an effervescing base, the result being a combination which forms a palatable morning draught that acts quickly. The salt is put up in substantial looking bottles labelled with a view of the Buxton Pump Room, which also figures on the attractive carton. Chemists can have their own name and address printed on both. It is an article which should sell readily.

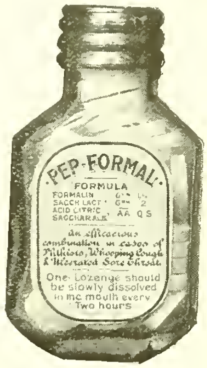
Culinary Specialities.—Messrs. A. R. Lorimer, 20 and 21 Laurence Lane, London, E.C., have introduced for this season the Premier junket in the form of powders to retail at 1*d.* each or a packet of seven for 6*d.* Each powder makes half a gallon of custard jelly or junket. The show card used for displaying the sample packet of Premier junket contains one of the late Mr. Fred Reynolds' "funny boys," and two other Reynolds' sketches are used in the handbills. Messrs. Lorimer inform us that they have a series of nursery rhyme sketches by Mr. Reynolds, and they hope to produce others in due course. The firm also manufacture the "Premier" flavouring essences, which are neatly put up and of rich quality.

Voigtländer's List.—Messrs. Voigtländer & Sohn, a.g., 12 Charterhouse Street, Holborn Circus, London, E.C., have issued a handsome and instructive catalogue and price-list containing full details of their lenses, cameras, and accessories. Since the publication of their last price-list, a large number of innovations have been introduced, including, among lenses, the Heliar, Dynar, and Oxyn series, which have become immensely popular. The name of Voigtländer has so long been associated with lenses, that it must not be forgotten the firm supply complete photographic outfits, and are now manufacturers of cameras, the "New Metal" and "Reflex" being the most recent. The list is profusely illustrated with well-executed half-tone reproductions of work done with their lenses and cameras, while an article by Dr. H. Hasting, F.R.P.S., on "The Judicious Selection of Lenses and Cameras" gives valuable information. A copy of the work will be sent free to any of our readers.

Newbery Catalogues.—Messrs. F. Newbery & Sons, Ltd., Charterhouse, London, E.C., send us an advance copy of their 1907 catalogue of druggists' sundries and proprietary medicines. This event generally affords us the opportunity of reporting on the births and deaths in the proprietary-medicine world during the year so far as can be estimated by the changes in that section of the catalogue. We now learn that 435 entries have been removed and 602 new entries have been made in it, so that the birth-rate continues to be in advance of the death-rate. Another important feature of this year's list is that an unusually large number of prices have been reduced—namely, 1,157. Indications as to which proprietary medicines are poisonous have been brought to date, and P.A.T.A. and F.R.R. prices are also indicated. We may say that the catalogue is divided into four sections, the first of 288 pages is devoted to druggists' sundries, the next, thirty-two pages, to packed goods, and the proprietary medicine section occupies 366 pages, but many of these are advertisements. A list of Messrs. W. R. Warner & Co.'s manufactures follows this with remarks on medicine-stamp duty. Besides this well-known catalogue, Messrs. Newbery have this year issued an illustrated catalogue of photographic requisites, aneroid barometers, magneto-electric goods, fountain-pens, etc. This catalogue contains only retail prices, but there is issued with it a discount-key showing the terms, varying from 10 per cent. to 35 per cent.

Two New Confections.—Messrs. Meggeson & Co., Ltd., 14 and 15 Mile Lane, London, E.C., have made another Mr. Squeers impossible by producing that Dickensian pedagogue's spring medicine, brimstone and treacle, in the form of delicious caramels, which are just the sort of thing that a child will ask its mother for, and so get a dose of cooling and purifying medicine without knowing it. They are put up in boxes of three dozen, the boxes measuring about 3½ in. by 2½ in., the style being shown in the illustration.

BRIMSTONE & TREACLE
CARAMELS
An Old and Valuable Combination as a
SPRING MEDICINE
Cooling and Purifying the Blood,
FOR CHILDREN AND ADULTS.
Two or three Tablets to be taken night and morning.


PEP-FORMAL
FORMULA
FORMALIN
SACCH LACT
ACID CITRIC
SACCHARA
AA Q S
An efficacious combination in cases of Phthisis, Whooping Cough & Ulcerated Sore Throat.
One Lozenge should be slowly dissolved in the mouth every Two hours

Another new preparation is Pep-Formal, a small lozenge in which ½ grain of formalin is combined with sugar of milk and citric acid with a lozenge basis, and is an efficacious combination in cases of phthisis, whooping cough, and ulcerated throat. Pep-Formal is put up in bottles. The lozenges are an excellent antiseptic, and apart from the use above indicated they are good for smokers, as they cover the nicotine odour effectively.

Westminster Wisdom.

(From our Parliamentary Representative.)

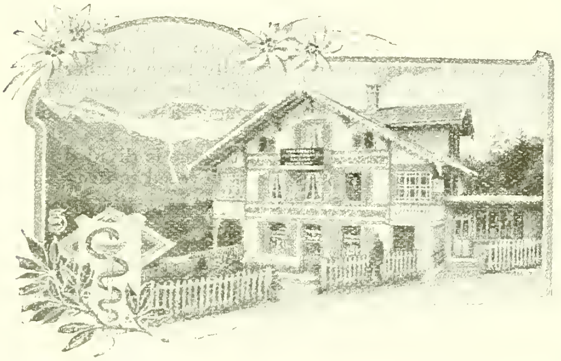
The Poisons and Pharmacy Bill

is still being postponed from day to day, the Government's time being taken up with Irish measures. It may be as well to state again that after the second reading Mr. Herbert Samuel is to move that the Bill be committed to a Select Committee of fifteen members.

Sunlight.

Mr. W. H. Lever, on entering the House of Commons on Tuesday, July 23, for the first time since the *cause célèbre*, slipped into a seat near the bar below the gangway, evidently hoping to escape observation; but his plan did not succeed. He was observed, and applause went up from all parts of the House; so much so that Mr. Lever, his face flushing with emotion, rose and bowed his acknowledgment.

THE HIGHEST PHARMACY IN EUROPE.



Pharmacie Internationale, Adelboden.

Mr. Th. Hopf, Pharmaceutical Chemist, tells in Esperanto how he established his Pharmacy in Adelboden, Bernese Oberland, 4,500 feet above the sea-level, in a letter to "The Chemist and Druggist." He adds some observations on the day's work there, the climatic conditions, and how visitors spend their time.

ESPERANTO.

Adelboden estas vilaĝo, laplej alta kun preĝejo en Berua Oberando je 1350 metroj super la maro, au ĉirkau 4500 piedoj lau angla mezuro. Ĝi havas ĉirkau 1500 loĝantoj, kiuj estas dissemataj en la multaj dometoj de la vasta fundo de la valo. Por atingi la plej proksimau vilaĝon kaj fervojon oni devas marŝi au veturi ĉirkau 12 milojn dum 2–3 horoj al Frutigen. Altaj montĉenoj disigas la valojn kaj vilaĝojn.

Sed precipe tiu fakto altiras la fremdulojn kaj faras el tiuj okaj serĉitajn loĝejojn por la somero kaj vintro. Multaj hoteloj estas konstruitaj kaj la vila, ĝo pligrandiĝis ĉiam pli. Pro tiu pli kaj pli multnombra vizitado, estis necese malfermi apotekon, kie la fremdulo trovas ĉian, kiun li bezonas. Antau 2 jaroj mi efektivigis tion, malgrau multaj mabhelpaĵoj. La tuta lignaĵo, la glasoj, boteloj, potoj, drogoj specialaĵoj ktp. estis kondukataj surveturiloj per ĉevaloj kaj ĉio alvenis et bona stato kaj meritis la miradon de ĉiuj vizitantoj. Piu estas mia plej granda kontentiĝo. En internacia apoteko oni devas plenumi multajn bezonojn kaj dezirojn, kaj koui la kutimojn de ĉiuj landoj, ĉar venas tie Anglaj, Germanoj, Francoj, Italoj, Belgoj, Holandoj, Svedoj, Amerikanoj, eĉ Nigruloj ktp. En Svisujo ni havas okazon lerni la internacian apotekarton kaj la lingvojn. Por la angla klientaro mi havas specialan fakon kun la kuraciloj lau la brita farmakopeo, la mezuriloj kaj specialaĵoj. Do la publiko trovas ĉion, kiel en Anglujo; nur la prezo estas la duobla, pro la port kaj limdefrago. Ni do povas fari ĉiujn anglajn kuracistajn ordonojn (prescription) kaj mi posedas kvar librojn pri farmacio el Britujo.

Okazas ke la riprezentantaj de anglaj firmoj vizitas ninkio estas tre utila por ni, ĉar ni konatiĝas kun multaj novaĵoj.

Niaj studoj estas pli gravaj, ol en Anglujo. Ni plenumas la entran ekzamenon al la universitato. Post du jaroj da lernado en apoteko ni faras la unugradan ekzamenon kaj post unu jaro da stato en apoteko kaj du jaroj da studo en Universitato ni ricevas la diplomon post gravega ekzameno. Tio rajtigas uni, gvidi apotekon, sed nur unu; do en Adelboden kun la malmultaj loĝantoj, ni povas valorigi ĝiu nur dum 5 au 6 monatoj, dum la fraudula sezono. Sed tiu tempo estas amuziga kaj oni devas paroli ofte en 4 lingooj en spaco da 5 minutoj kaj prepari ordonojn kuracistajn el ĉiuj partoj de la tero. Oni povas imagi, ke ne estas facile, trovi asistenton, kiu povas plenumi tiujn kondiĉojn kaj precipe por la vintro mi bezonas komizon, parolanta angle, ĉar la klientaro estas preskau pure angla. La vintra sezono komencas je la fino de novembro kaj dauras ĝis la mezo de marto, kelkaj lervoruloj je la vintraj sportoj restas pli longe. Ofte okazas, ke la sportuloj entras en la apotekon kun skioj al la piedoj; la neĝo estas tiel alta, ke la ĝardeno kun la malaltaj arboretoj ne estas videbla kaj oni devas eltranĉi vojon el la neĝamaso por atingi la pordon de la apoteko. Antau la domo sur la posta strato alvenas ĉiuj veturiloj kaj vintre malsupren glitas la sportuloj sur ĉiu specaj glitiloj. Estas bruo plena vivo, ĉar ĉiam oni devas ekkrü por atentigi la alvenantojn sur la multkurbita strato. Sur ĉiuj kampoj

ENGLISH.

Adelboden is a village, the highest possessing a church, in Bernese Oberland, 1,350 metres above the sea, or about 4,500 English feet. It has about 1,500 inhabitants, who are scattered in the numerous small houses to be found at the bottom of the valley. The nearest village and railway is about twelve miles away at Frutigen. A high chain of mountains separates the valleys and the villages. It is principally this which draws the foreigners, and makes these places much in demand as summer and winter resorts. Many hotels have been built, and the village is constantly growing. On account of the great increase in the number of visitors, it was necessary to open a chemist's shop, where the stranger might find everything needful. Two years ago in the face of many difficulties I overcame this need. The whole woodwork, glasses, bottles, pots, drugs, specialities, etc., were conveyed on horse-drawn vehicles, and everything arrived in good order to the admiration of all the visitors. That was a great satisfaction to me. Owing to the international character of this store, one has to provide for many needs and desires, and know the customs of all countries, because we are visited by English, Germans, French, Italians, Belgians, Dutch, Swedes, Americans, and even Negroes. In Switzerland we are obliged to learn our profession internationally and languages. For my English clientele I have a special section with medicines, according to the British Pharmacopœia, measures, and specialities. Thus the public may find everything as in England, only the price is double on account of the carriage and Customs duty. We can therefore make up the prescriptions of English doctors, and we possess four books on pharmacy from Great Britain. It sometimes happens that representatives of English firms visit us, which is very useful for us, as in this way many novelties are brought to our notice.

Our studies are more important than in England. We take the Entrance examination at the University. After two years' apprenticeship in a chemist's we undergo the first-grade examination, and after two years' University course we receive the diploma, after having undergone a most searching examination. This authorises us to conduct a chemist's business, but only *one*. Nevertheless, in Adelboden with its few inhabitants we can carry on business during only five or six months of the visitors' season, but that time is very amusing, and one is often obliged to speak in four languages in the space of five minutes, and prepare doctors' orders from all parts of the earth. As may be imagined, it is not easy to find assistants capable of fulfilling such a position, and especially in the winter I need a clerk speaking English, for the clientele is almost exclusively English. The winter season commences at the end of November, and lasts until the middle of March, though some of the enthusiasts in winter sports remain longer. Sometimes these sportsmen enter the shop with ski on the feet. The snow is so high that the garden and the shrubs are invisible, and the way has to be cut through the snow to reach the door in front of the shop. All kinds of vehicles are passing, and nklinatoj ĉirkau la vilaĝo troviĝas multo da sinjoroj kaj sinjorinoj de ĉiu aĝo por ekzerci la skiglitadon, farantaj multajn falojn en la blanka molaĵo.

De la apoteko oni ĝuas de belega vido al la altaj montĉenoj de Wildstrubel kaj Lohner, sur la altaj akvofaloj de Engstligen kaj la kampoj kaj arbaroj kun la multaj dometoj. Vere la situacio estas mirega.

Estas necese, paroli ankorau pri la klimato.

Kontrau la nordaj ventoj la valo kaj vilaĝo estas ŝirmita per la longa moutĉeno de Nieseu, alta je 2300–2700 metroj. Ĝi estas kvazau brako de Wildstrubel masivo kaj ĉirkau, prenas nian lokon. Ĉe Adelboden la valo estas larĝa je proksimume Omiloj. Kaj la vilaĝo ne kuŝas en la fundo, sed sur inklino, ĉirkau zoopiedoj super la rivero. Tiu kondiĉo estas la plej feliĉa por la klimato, ĉar ĝi neniam permesas al acro, stari, sed ebligasal ĝi konstantan movadon su, pren au malsupren lau lia pezo kaj temperaturo, kiu kauzas renoviĝon. Tiu fakto estas grava pro la formado de nebuloj kaj faras ilin tre mal, oftaj, precipe dum la vintro. Do ni ĝuas dum multaj tagoj de la plej bela suno varma kaj povas malsupren rigardi sur la maro de nebuloj kuŝanta super la regiono de la lago de Thun.

Oni miros, semi diras, ke ni havas vintre ofte varmon, kiel en somero. Tion okazas la pli maldensa aero malsatata je malsekaĵo kaj ebliganta al la sunradioj trapasi la atmosferon senhaltigitaj. Ni observas al termometro varmojn ĝis 30–40° C., dum al ombro la temperaturo estas ĉirkau 0°. La aero do apenau varmiĝas pro sia maldenso kaj ankau la neĝo povas sufiĉe fondi, reĵetanta la sunradiojn; do oni povas iri sur glitŝuoj malgrau la malvarmo kaj vestita, kiel en somero! Oui ofte prenas la meztagmanĝon sub libera ĉielo.

La malvarmo ne estas malagrabla sentoĉeni. Post la kuŝo de suno, le temperaturo rapide falas kaj atingas ofte 10° C. da frosto kaj pli, do diferencon da 40–50° C. en la dauro de unu horo! Sed tiu ne estas malhelpo de la klimato, ĉar oni ĝia tute bone suferas. La malalta aerpezo de l' montaro ebligas al sango pli facilan alvenon en la plej eksterajn vazetojn de la hauto, kio varmigas la tutankorpon. Tiu fakto plialtigas la renoviĝon de l' tutakorpaĵo kaj destinas la montarou al klimata sanigejo.

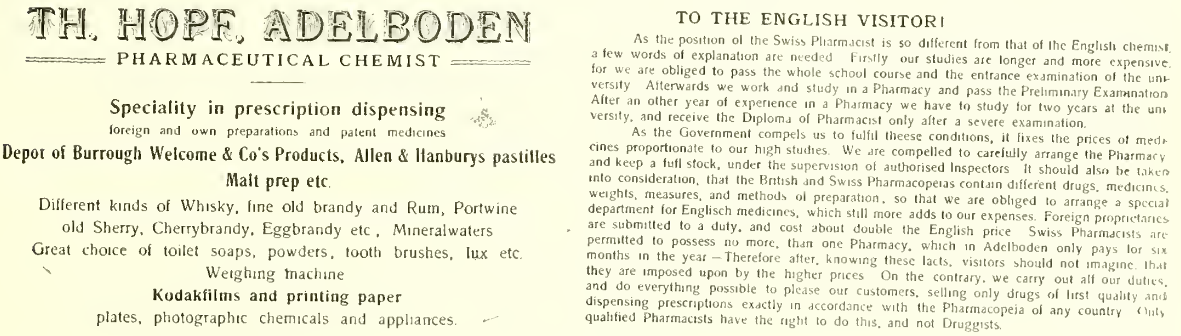
La dauro de la sunlumado en Adelboden estas dum la monatoj decembro kaj januaro de la 10½ a horo matene ĝis la 4a posttagmeze. En februaro ĝi leviĝas jam-je la 10 a kaj rapide plifruigas sian levadon, ĉar de l' marto ĝi devas komenci, fondi la neĝamasojn, kaj revivigi la verdaĵojn.

in the winter the sportsmen come down on all kinds of sleighs. There is plenty of noise and excitement, for one has to be continually warning the people in the many zigzag streets. On all fields where there are inclines there are to be found numbers of ladies and gentlemen of all ages practising on ski, making many a fall upon the smooth white snow.

From the shop there is a fine view towards the high chains of mountains at Wildstrubel and Lohner, and the high waterfalls of Engstligen and the fields and forests with their many châlets. Truly the situation is admirable.

It is necessary to say something as to the climate. The valleys and the villages are protected from the northern winds by the long mountain range of Niesen 2,300 to 2,700 metres high. It is, as it were, an arm of the Wildstrubel, and surrounds our place. At Adelboden the valley is about six miles wide, and the village does not lie at the bottom, but upon a slope about 300 ft. above the river. In regard to the climate we are, therefore, favourably situated, as the air is never still, but constantly moving up and down, according to the temperature. This fact is very important as regards the presence of fogs, which appear very seldom, particularly during the winter. Therefore for many days we are able to enjoy the warm sun, and can look up to the sea of mist lying above the region of lake Thun. Tho reader will be surprised to hear that often in the winter we experience the warmth of summer. This is owing to the rare and dry atmosphere which enables the rays of the sun to pass without interruption. The thermometer shows 30° to 40° C., while in the shade the temperature is nearly at zero. But on account of its rarity the air does not become warm, and also the snow does not melt, freely reflecting the sunrays. One can go skating in spite of this warmth and dressed as in summer. The midday meal may often be taken in the open air. The coldness is not a disagreeable experience with us. After sunset the temperature rapidly falls, often as low as 10° C. below freezing point, thus showing a difference of between 40° and 50° in the space of an hour. But these climatic conditions are in no way inconvenient, and are easily tolerated. The light pressure of the air on mountains enables the blood to more easily reach the very extremities of the small vessels of the skin, thus warming the whole body. The effect of this is rapid recuperation of the whole body, and thus mountains are indicated as climatic sanatoria.

The duration of sunlight in Adelboden during December and January is from 10.30 in the morning until 4.30 in the evening; in February the sun rises at ten o'clock, and each day after rises earlier still, for at the beginning of March it has to commence its work of melting the glaciers and reviving nature.



TH. HOPF, ADELBODEN
PHARMACEUTICAL CHEMIST

Speciality in prescription dispensing
foreign and own preparations and patent medicines
Depot of Burrough Welcome & Co's Products, Allen & Hanburys pastilles
Malt prep etc.
Different kinds of Whisky, fine old brandy and Rum, Portwine
old Sherry, Cherrybrandy, Eggbrandy etc., Mineralwaters
Great choice of toilet soaps, powders, tooth brushes, lux etc.
Weighing machine
Kodakfilms and printing paper
plates, photographic chemicals and appliances.

TO THE ENGLISH VISITOR!

As the position of the Swiss Pharmacist is so different from that of the English chemist, a few words of explanation are needed Firstly our studies are longer and more expensive, for we are obliged to pass the whole school course and the entrance examination of the university Afterwards we work and study in a Pharmacy and pass the Preliminary Examination After an other year of experience in a Pharmacy we have to study for two years at the university, and receive the Diploma of Pharmacist only after a severe examination.

As the Government compels us to fulfil theese conditions, it fixes the prices of medicines proportionate to our high studies. We are compelled to carefully arrange the Pharmacy and keep a full stock, under the supervision of authorised Inspectors It should also be taken into consideration, that the British and Swiss Pharmacopeias contain different drugs, medicines, weights, measures, and methods of preparation, so that we are obliged to arrange a special department for Englisch medicines, which still more adds to our expenses. Foreign proprietaries are submitted to a duty, and cost about double the English price Swiss Pharmacists are permitted to possess no more, than one Pharmacy, which in Adelboden only pays for six months in the year — Therefore after, knowing these facts, visitors should not imagine, that they are imposed upon by the higher prices On the contrary, we carry out all our duties, and do everything possible to please our customers, selling only drugs of first quality and dispensing prescriptions exactly in accordance with the Pharmacopeia of any country Only qualified Pharmacists have the right to do this, and not Druggists.

Mr Hopf's Business Card.

The exports of olive oil from Seville during 1906 amounted to 5,054 tons, against 6,370 tons in 1905 and 7,026 tons in 1904.

Chemical products, valued at 9,200*l.*, were imported into Monastir (Turkey) during 1906. They were obtained from Austria-Hungary, Belgium, France, Italy, and Germany.

The imports of chemicals and medicines into Suez during 1906 amounted in value to 46,764*l.*, against 50,099*l.* in 1905; exports of similar goods were 4,272*l.*, against 3,587*l.*

The exports of gum arabic from Egypt during the three months ending March amounted to 969,702 kilos., against 1,493,472 kilos. in 1906 and 2,324,817 kilos. in 1905.

A Kelvin Story.—Several years ago when knighthood was conferred on Lord Kelvin a student perpetrated a neat witticism. When the great scientist was Professor of Natural Philosophy at Glasgow University he had an assistant, named Mr. Day, to take his place during his absences. Lord Kelvin is too brilliant a man to be an ideal teacher, the workings of his mind being too rapid for those of his students. One morning, returning from a holiday—he was then Sir William Thomson—he found written on a blackboard, the prank of a student, "Work while it is Day, for the Knight cometh, when no man can work."

Formulas for Tablets.

THE formulas here printed are selected from the treatise by Mr. Joseph R. Wood, M.A., Ph.G., recently published by the J. B. Lippincott Co., 5 Henrietta Street, London, W.C., at 7*s.* 6*d.* net. The quantities in each of the formulas produce 7,000 tablets of the sizes stated.

Absorbent Dyspeptic.

1	Pepsin	1 lb.
2	Charcoal	2 lb.
2½	Sodium bicarb.	2½ lb.
	Starch	1 lb.
	White dextrin	½ lb.

Total weight, 7 lb.

Lubricant, oil. Die, ⅜ in. Weight, 7 gr.

Aloin, Bellad., Strychnine, and Ext. Cascara.

⅕	Aloin	1400 gr.
⅛	Ext. belladonna	2 oz.
1-120	Strychnine sulph. = 1-12 *trituration,* 10 = 1	583 gr.
½	Ext. cascara	8 oz.
	Starch	4 oz.
	Milk-sugar	4 oz.

Total weight dry, 1¼ lb.

Die, 7-32 in. Weight, 1¼ gr.

Alum Comp.

2½	Alum	2½ lb.
2	Zinc sulphate	2 lb.
1-32	Morphine sulphate	½ oz.
1	Fl. ext. golden seal (colourless) = 1-40 *hydrastine sulphate*	175 gr.
	Milk-sugar	12 oz.
	Cane-sugar	12¼ oz.
	Boric acid, powdered (lubricant)	4 oz.

Total weight dry, 5 lb.

Die, 11-32 in. Weight, 5 gr.

Astringent Wash.

2	Lead acetate	2 lb.
2	Zinc acetate	2 lb.
1-20	Berberine hydrochloride	350 gr.
1-32	Morphine acetate	½ oz.
	Milk-sugar	24¾ oz.

Total weight dry, 5 lb.

Dried at 104° F., lead acetate loses 14¼ per cent. of its weight, and zinc acetate 16½ per cent. The combined losses are 10 oz. Weigh and dry out before granulating. Granulate with syrup and water, equal volumes. Lubricant, boric acid.

Die, 5-16 in. Weight, 5 gr.

Bitter Tonic.

1	Wine ipecac. = 1-10 *fl. ext.*	700 min.
2	Tr. capsicum = 1-80 *oleores*	88 min.
5	Tr. nux vomica = 1-10 *ext.*	700 gr.
5	Tr. gentian comp. = 1 *fl. ext.*	14⅝ oz.
	Cane-sugar	3 oz.
	Milk-sugar	12 oz.

Total weight dry, 1¼ lb.

Die, 7-32 in. Weight, 1¼ gr.

Bronchial.

⅓	Ammonium chloride, powdered	5⅓ oz.
1	Ext. liquorice, powdered	1 lb.
⅕	Balsam tolu	3⅕ oz.
⅓	Oleores. cubeb	5⅓ oz.
¼	Hyoscyamus, powdered	4 oz.
⅕	Senega, powdered	3⅕ oz.
1-50	Ipecac., powdered	140 gr.
	Magnesia, calcined	2 oz.
	Cane-sugar	2 lb.
	Milk-sugar	1½ lb.
	Tragacanth, powdered	8 oz.
	Mucilage, tragacanth 5 per cent.	8 oz.

Total weight dry, 6 lb.

(Not counting oleores. cubeb.)

Die, 13-32 in. Weight, 6 gr.

Warm the balsam tolu with about 4 oz. alcohol, until dissolved. Add the calcined magnesia, evaporate to dryness, and powder. Mix with balance of powders and granulate. After compressing, mix the oleoresin cubeb with enough oil (almond, peanut, or mustard expressed oils are good) to make 7,000 drops, and put one drop on each tablet.

Chlorodyne.

⅙	Morphine hydrochloride	1167 gr.
¼	Ext. cannabis indica	4 oz.
1-300	Nitroglycerin = 1-30 10-per-cent. solution	233 min.
½	Ext. hyoscyamus	8 oz.
1-10	Oleoresin capsicum	700 min.
1-10	Oil peppermint	700 min.
	Calcined magnesia	2 oz.
	Starch	8 oz.
	Sugar of milk	1 lb.

Total weight dry, 2½ lb.

(Not counting oil or oleoresin.)

Die, 9-32 in. Weight, 2½ gr.

The oil peppermint and oleoresin capsicum should be mixed with sufficient bland oil to make 7,000 drops, and one drop put on each tablet.

Cough.

1	Ammonium carbonate	1 lb.
¾	Squill, powdered	12 oz.
¾	Senega, powdered	12 oz.
5	Tr. opium, camph =	
	1-50 *opium, powdered*	140 gr.
	1-50 *camphor*	140 gr.
	1-50 *benzoic acid*	140 gr.
	1-50 *oil of anise*	140 min.
	Saccharin	140 gr.
	Milk-sugar	12 oz.
	Talcum, powdered (lubricant)	2 oz.
	Mucilage acacia, 20 per cent.	q.s.

Total weight dry, 3½ lb.

Mix the squill, senega, opium, benzoic acid, saccharin, and milk-sugar, and granulate with the mucilage acacia. Dry, and sift (number 20). Dissolve the camphor in the oil anise and add to the above granulation. Reduce a sufficient quantity of ammonium carbonate to make one pound number 30 or 40 granule, free from powder which will pass through a number 50 sieve. Lubricate this with the talcum and mix with the granulation.

Die, 5-16 in. Weight, 3½ gr.

Diarrhœa.

½	Opium, powdered	4 oz.
¼	Camphor, powdered	4 oz.
⅛	Ipecac., powdered	2 oz.
⅙	Lead acetate	1167 gr.
1	Bismuth salicylate, basic	1 lb.
	Starch	5¾ oz.
	Acacia starch paste	4 oz.

Total weight dry, 2¼ lb

Die, 9-32 in. Weight, 2¼ gr.

Lead and Opium Wash.

5	Lead acetate	5 lb.
¼	Ext. opium, U.S.P.	4 oz.
4	Ammonium chloride, granular	4 lb.
	Boric acid, powdered	1 lb. 3 oz.
	Syrup, 3 vol. Water 1 vol	q.s.

Total weight dry, 10 lb.

Dry out the lead acetate at about 110° F. Mix with 2½ oz. of the ext. opium and 14 oz. of the boric acid, granulate and dry. Mix the ammonium chloride with the balance (1½ oz.) of the ext. opium, moisten just enough to produce uniform colour, and dry. Mix the dry granulations, lubricate with the balance (5 oz.) of the boric acid, and compress. The ammonium chloride is used to increase the solubility of the lead acetate. Decomposition results when the salts are heated together, and hence the necessity for separate granulation.

Die, 7-16 in. Weight, 10 gr.

Nux and Pepsin.

1-100	Nux vomica, powdered	70 gr.
1-10	Pepsin (insoluble) powdered	700 gr.
	Cane-sugar	3605 gr.
	Milk-sugar	10 oz.

Total weight, 1¼ lb.

Die, 7-32 in. Weight, 1¼ gr.

Potassium Chlorate and Borax.

2½	Potassium chlorate, No. 16	2½ lb.
2½	Borax, powdered	2½ lb.
	Syrup, 3 vol. Water, 1 vol.	q.s.

Total weight dry, 5¼ lb.

Granulate the borax with the syrup and water. Dry, and lubricate with oil. Mix with the potassium chlorate gently.

Die, ⅜ in. Weight, 5¼ gr.

Throat Mentholic.

1-35	Menthol	200 gr.
1-280	Cocaine hydrochloride	25 gr.
1-80	Oil anise	88 min.
1-12	Benzoic acid	583 gr.
1-16	Eucalyptol	1 oz.
	Cane-sugar	4 lb. 13 oz.

Total weight, 5 lb.

Dissolve the cocaine in water, mix with the sugar, and granulate. Warm the other ingredients together until dissolved, and use as a lubricant.

Die, 11-32 in. Weight, 5 gr.

It is frequently desirable to make a tablet similar to this, but milder and larger. The cocaine is better omitted when the tablet is used to supply a popular demand.

1-50	Menthol	140 gr.
1-50	Oil anise (or wintergreen)	140 min.
1-12	Benzoic acid	583 gr.
1-32	Eucalyptol	½ oz.
	Cane-sugar	9 lb. 14 oz.

Total weight, 10 lb.

Die, ½ in. Weight, 10 gr.

Observations and Reflections.

By Xrayser.

Manchester is where we all ought to be this week, and where about half of one per cent. of the registered pharmacists of Great Britain, excluding those actually residing in the locality, probably have been. The ninety-nine and a-half per cent. of us who, for business, family, or financial reasons have had to stay away, are repressing our natural jealousy of those more fortunate members of our fraternity who figure in all these festivities; but we will try to get even with them next week, when the time for criticism of their sayings and doings as our representatives and delegates has arrived. It certainly is to be regretted that the British Pharmaceutical Conference has not more fully justified the anticipations of its founders. Occasional associated visits to fellow pharmacists in distant or different districts cannot fail to benefit everybody. It is the peripatetic character of the Conference which principally recommends it. But the opportunity offered has been accepted by those for whom it was intended to only a very limited extent. Perhaps the cause may be traced to the Executive, perhaps to the unsocial nature of chemists. It is fairly probable, too, that the gradual elimination of the scientific element from modern pharmacy just when it was expected that we were going to be more learned than we had ever been before, may have accounted for the comparative failure.

The Crumbling of the Elements is the tremendous scientific discovery of this century; but it is one which the world contemplates with considerable indifference. If it is, indeed, a fact that metals, gases, and earths, animals, vegetables, and minerals are all in process of shifting one into another, we shall have to alter our text-books, that is all. So long as the atoms, if there are such things, so revolve as to keep up the supply of the materials to which we have grown accustomed for the next ten thousand generations or so, no one need worry. It would certainly be inconvenient if all the elements were suddenly to begin to transmute themselves, say, into gold. This line of thought is suggested by a letter in last week's "Nature," from Sir William Ramsay, intimating that he has got a few steps further in his observations of the mutability of the elements. It was only in 1903 that he and Mr. Soddy first found the radium emanation developing into helium. This discovery has been confirmed by many other competent physicists. But it now appears that if this radium emanation passes through water it changes into neon; if through a saturated solution of copper, it resolves itself into argon. But these transformations do not greatly strike the imagination. Neither radium, nor helium, nor neon, nor argon is familiar to us. But when Sir William goes on to tell us in a matter-of-fact way that the copper acted upon by the emanation gets degraded into lithium, and perhaps some of it into sodium and potassium, things begin to look serious. Sir William Ramsay will be explaining matters more fully to the Chemical Society before long.

The Evolution of Chemistry is the title of an article in the current "Revue de Paris," by M. Louis Houllevigue, which bears upon the subject of the last paragraph. All sciences, says this writer, pass through three stages. First, and for a long time, the results of observation and experience float about in the general total of human knowledge like a nebula. In the second stage separate sciences condense out of this nebula. This occurred in chemistry in the period between the Renaissance and the end of the eighteenth century. Then, thirdly, comes the time when the separate sciences interpenetrate each other again, and we discover their unity. Glazer, in 1670, defined chemistry as "the art of opening mixtes" by incising, contusing, pulverising, alcoholising, rasping, sawing, levigating, granulating, laminating, melting, liquefying, digesting, infusing, and macerating. Lavoisier, a few days before his death, wrote that "Chemistry marches towards its object in dividing, subdividing, and re-subdividing." It was Berthelot who first saw clearly the insufficiency of a doctrine which restrained chemistry to analysis, and thus raised an insurmountable barrier between the work of nature and that of the laboratory. The chemists of the early part of last century were content to discover a formula. The brief sign = satisfied them. Now the interest lies in the reaction itself. Lastly, the author shows that the "laws" which but recently appeared so necessary to the science are now challenged. The investigations of Curie and Ramsay have shaken faith in the ideas of elements and simple proportions of combining bodies; and even the law of the conservation of matter, it appears, is not safe, for Landolt has been weighing substances before and after chemical reactions "with the most minute precautions," and finds invariable losses of millionths. We are far from the end of our surprises is the conclusion of the essayist.

The Verb to Mix is almost the only word of any pharmaceutical interest in the new part (Misbode to Monopoly) of the Oxford English Dictionary. It happens, too, to be the one word in this section with what is claimed to be a new etymology. Mr. Bradley, who edits this part, states that his chief, Dr. Murray, proved some years ago that our verb *mix*, and the consequent noun *mixture*, could not have descended from the Saxon verb "miscian," as that word had been dead a century or two before mix appeared. Mix came to us from the French, and was a back formation from the past participle of the Latin *miscere, mixtus*. The Saxon miscian may have been cognate, that is a sort of cousin of the Latin and Greek words with a common ancestor, but even this is doubtful. Quotations show that in the early part of the sixteenth century it was a chance whether the English verb would find its footing in the form of mix or mixt. Mixt was also a noun which lived until the end of the seventeenth century. It was chiefly used in connection with chemicals. Boyle, in 1680, writes in his "Sceptical Chemist" of "two sorts of mixts," and the same word occurs in the quotation from Glazer in the preceding paragraph.

The Fifty Thousand Pounds transferred from Millionaire Northcliffe to Millionaire Lever is not an event which compels us to squander our sympathy with the one or our congratulations with the other. The newspaper peer has probably not denied himself a single strawberry, nor has the soapmaker eaten one extra in consequence of that cheque. Mr. Lever and his colleagues of the collapsed combine no doubt cleared themselves of all suspicion of aiming at a monopoly antagonistic to the public interest. All the same, the failure of their attempt is not perhaps generally deplored. However benevolent the despotism of capital may be, the multitude have an instinctive dread of it. The residents in Port Sunlight are said to be very happy; they have pretty homes, airy rooms, gay gardens, and good schools for their children. What more can they want? Nothing, unless it be that they would all like to be little Levers. Which is preferable, comfortable employment or anxious independence? Whichever we might choose, if we could have the opportunity, it is certain that we are drifting away from the latter condition. Great factories are absorbing little ones, mighty organisations are ousting individualism, Napoleons of commerce are ruling ever-increasing industrial armies. But against this fast-developing tendency Socialism is marching, and it is a growing force. Whoever lives to see the combat will find plenty to interest him in it.

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Editorial Comments.

The B.P.C.

The occurrence of the annual meeting of the British Pharmaceutical Conference in the week of our Summer Issue robs us in part of the opportunity that such issues give of presenting to our readers a variety of contributions which are made direct to The Chemist and Druggist by writers in different parts of the British Empire. We do not deplore the fact unduly, for, as we have stated on more than one occasion, the British Pharmaceutical Conference is the only organisation of our craft in the Empire which can truly be said to be Imperial, and some service is done to it and, we trust, interest in its fortunes and proceedings fostered, by the presentation of a concise and comprehensive report of the meeting held in Manchester this week.

This was the forty-fourth meeting of the B.P.C., and the second time that Manchester has been visited. The local committee of pharmacists, who, under the presidency of Mr. G. S. Woolley, made all the preliminary arrangements and entertained visitors during the week, were most generous in their hospitality; indeed, they were in several respects too generous, from the point of view of towns less rich than the capital of the cotton industry. With the recollection of enjoyment and gifts which meant a bounteous treasury, chemists of smaller towns might hesitate to act as hosts to the Conference in future years. London once tried to stop large-hearted and full-purse hospitality by doing it so well that it could not be beaten. This week Manchester, without, we understand, attempting to do so, has beaten London. We are not advocates of a dead-level in Conference entertainment, but there is apt to be comparison in such matters between city and town, and this we deprecate.

The Executive of the Conference was able to place a better report before the members on Tuesday. The financial deficit is practically wiped out, and the membership has improved. There has been occasional talk during the year about the B.P.C. becoming an annexe to the Pharmaceutical Society of Great Britain. It would be very stupid of the leaders of that Society to do anything so foolish as to precipitate a disaster like that. The Society is not imperial, and never can be; the Conference is, and has a place in pharmacy which the Society cannot occupy, since its functions are administrative. The members of the Society as a body have not the slightest desire to absorb the Conference, and if this were even attempted there would be a big transference of guineas from the Society to the Conference. Anyway this week's meeting relegates all rumours to the limbo of tittle-tattle. It was well that the Conference had this year a neutral person as president. We daresay Mr. Tyrer has found the pharmaceutical collar chafe a little throughout the year, and there was some evidence of this in his

Presidential Address.

We refer especially to his remarks about the "Year-book of Pharmacy," which is the visible return to most of the members for the annual subscription. The last volume showed a great falling-off. This was poor business, and Mr. Tyrer said so, if not so bluntly. There we shall leave it, for while he put Pharmacopœia revision and the "Year-book" in the forefront of his address, the subject proper was the place which British chemists hold in chemical research. Mr. Tyrer's remarks were a corollary to the address recently delivered by Professor Meldola on his retirement from the presidency of the Chemical Society. Professor Meldola was pessimistic, particularly in regard to the lack of encouragement given to professional chemists by manufacturers in this country. Mr. Tyrer, speaking from within the confines of applied chemistry, and from wide knowledge of men associated therewith, was optimistic. He had obtained from eminent physicists, such as Lord Kelvin, and from chemists old and young, definitions of research. These make interesting reading, but far more important was the rapid survey which Mr. Tyrer gave of the achievements in research by those whose opinions on the subject he quoted. His observations show that we have nothing to be ashamed of; indeed, in many departments of chemical technology we have every reason to be proud of the discoveries made by our workers, and of the progress in methods which their researches have led to. Space does not permit a complete analysis of Mr. Tyrer's valuable record, but we may call attention to its characteristic patriotic spirit, which places it on a high level amidst B.P.C. presidential addresses.

The Communications.

presented to the Conference were more numerous than was expected, for the tendency now is to limit the number and raise the quality of the papers communicated. There were a few trivial notes amongst the score that were read; but most of the papers were worthy of the occasion. We have gone over most of them with the object of presenting the ascertained facts as concisely as possible, and the abstracts are embodied in our report of the proceedings, while here we give such summaries as will enable the busiest of men to see at a glance what the authors have done.

Chloroforms of Aconite and Belladonna.

Mr. Robert Wright, of Buxton, again had the honour of opening the technical proceedings of the Conference by reading the first paper, which was on the chloroforms of aconite and belladonna—an old subject of his. The present paper consisted chiefly of observations resulting from experiments made with the formulæ of the preparations which are to be included in the Pharmaceutical Society's "Codex." The process employed is to moisten the drug with solution of ammonia, and after twenty-four hours percolating with a mixture of absolute ammonia and chloroform. Mr. Wright also discussed the methods of assaying the preparation, and showed that the "Codex" process of preparation yields a product much stronger in alkaloid than his own one. The details of the aconite and belladonna methods of assay were given in full.

Oil of Juniper.

The recent action under the Sale of Food and Drugs Act against a North London chemist for selling a sample of oil of juniper which the public analyst certified to contain oil of turpentine, but which the Government chemists found to accord with the British Pharmacopœia characters and tests, has created great interest in analytical and wholesale circles. The decision by the Joint Committee of the Society of Public Analysts and the Pharmaceutical Society recommending that the British Pharmacopœia characters and tests should be altered, while disposing of the case, by no means settled the points in dispute. Two papers on the subject were communicated. Messrs. John C. Umney and C. T. Bennett in theirs gave the characters of English and Hungarian oils of juniper, showing that the former is generally of much higher specific gravity and higher refractive index than the Hungarian, and the fractionation figures in respect of both prove that the Hungarian contains a larger proportion of lighter constituents. The authors recommended new density and optical figures for the British Pharmacopœia, and suggested that the distillate below 165° C. should be limited to 60 per cent., and some alteration should be made in regard to alcohol-solubility. It appears to be clear that some Continental distillers put on the market as oil of juniper an oil from which the heavier and more odorous portion has been eliminated, the latter being sold at a better price for other purposes. This was the chief point in the second paper on the same subject contributed by Mr. F. C. J. Bird, who also contrasted the constituent differences between English and Hungarian oils. Mr. Bird distilled some oil from Hungarian fruit, and discovered that this did not agree in character with the

Hungarian oil, the inference being that the latter is not an entire oil, as above stated.

Chromic Anhydride and its Solutions.

The determination of chromic acid by the acidimetric method is difficult because the solution becomes so coloured that an indicator cannot be used. Mr. T. E. Wallis, in a note on the subject, showed that by the addition of barium chloride and sodium acetate to the solution of chromic acid, the chromic radical is removed as an insoluble barium salt, and acetic acid, equivalent in amount to the chromic acid, is left free in solution, and can be directly determined by standard alkali with phenolphthalein as indicator. Having ascertained this, Mr. Wallis proceeded to investigate liquor acidi chromici, and found that the British Pharmacopœia is wrong in respect of some of its factors, the quantity of CrO_3 present being nearer 20 than 25 per cent. He suggested modifications of the characters and tests in the British Pharmacopœia, and submitted a new formula for the solution.

World-wide Pharmacy Notes.

The longest paper that has been communicated to the Conference for many a day was by Dr. W. Harrison Martindale, and was taken on Tuesday. It was entitled "Pharmacy Notes from Various Parts of the World; Chiefly in Regard to Present-day Prescribing and Dispensing Methods." Dr. Martindale did not attempt to read the paper, but we had the whole of it, with many illustrations, printed for him in pamphlet form, and it was distributed at the meeting. We have printed in the present issue, beginning on p. 150, a selection from the paper, which represents only a fraction of it. It included notes on new remedies in different countries, peculiar local demands, medicines which are most popular, and in connection with these, many valuable formulæ are given, besides a series of glossaries of words occurring in Danish, French, German, Russian, Greek, and other prescriptions. The series of labels reproduced are bound to give new ideas to many who are not above learning from their former *confrères*. We hope to print more of this paper in future issues. Dr. Martindale read merely an abstract of it, and exhibited several portfolios of labels and documents collected during his investigations.

Albumen and Starch Solutions

for analytical purposes do not go bad if 1 to 2 per cent. of mineral naphtha is added to them. It does not interfere with their use. This is the substance of a note by Mr. F. H. Alcock.

Alkali in Drug Ashes

was the subject of a short paper by the same chemist. He found the estimation of ash in pil. rhei co. to be rather a difficult problem, and in the result he recommended a modification of a Fresenius method, details of which are given in our report.

False Colocynth and Colocynthin.

Mr. W. A. H. Naylor and Mr. E. J. Chappell undertook the examination for Mr. E. M. Holmes of a specimen of the fruit of *Cucumis trigonus*, which grows in India, and resembles colocynth. They described in their communication the examination of the pulp from which they isolated colocynthin. The question of the hydrolysis of colocynthin arising, they took up this subject as a side issue, but it became the more important part of the paper, for it cleared up certain doubtful points, proving that colocynthin may be obtained in a crystalline state and that it, on hydrolysis, yields colocynthein, elaterin and a sugar. They also demonstrated that colocynth contains a white crystalline substance agreeing in its general characters with the colocynthetin of Walz.

The foregoing were read on Tuesday. Among Wednesday's communications were a paper by Professor Wild on calamine, one by Professor Weiss on "Immunity to Disease among Plants," and another by Dr. Knecht, on "Animal charcoal," the texts of which are not before us at the time of writing. The other papers are here described.

Plasters and Protective Tissues.

The subject of the communication of Mr. G. Pinchbeck, F.C.S., proved to be one of the most valuable papers communicated to this meeting. It dealt with the bacteriological examination of various kinds of plasters and protectives. In court plaster it was found that the pathogenic and non-pathogenic micro-organisms become exceptionally numerous, going as high as 1,420 to the square centimetre, when the plaster was carried in the coat pocket for three months. In the nature of things resinous adhesive plasters do not become so microbic, nor do Pharmacopœia plasters and rubber plaster, but goldbeater's skin also becomes quite microbic. The author dealt with the means to be adopted to make a plaster or protective aseptic. This is best done by the chemical means outlined in the paper, which concluded with a series of formulæ for the production of aseptic rubber plasters.

Liquid Extract of Cascara Sacrada.

Glycerin appears to be displacing alcohol as a preservative of cascara sagrada preparations. The official liquid extract preserved in alcohol makes muddy mixtures with water. Mr. J. H. Franklin provides a miscible liquor by using glycerin instead of alcohol, and adding to the filtered product strong solution of ammonia in the proportion of four minims to the ounce. The result is a particularly bright and miscible preparation, the aperient properties of the drug not being destroyed by the alkali, as several investigators have previously reported.

Ferrous Carbonate

was the subject of four papers. The first one that we abstract was by Mr. J. H. Franklin, and it dealt with a new method for making saccharated carbonate of iron of double B.P. ferrous strength. To do this Mr. Franklin uses sodium carbonate instead of the ammonia salt prescribed officially, and precipitates the ferrous carbonate in the presence of glucose, whereby he obtains a preparation testing up to 70 per cent. of $FeCO_3$. Full details and quantities are given in the paper. The ultimate purpose of Mr. Franklin's investigation was to get a carbonate suitable for making Blaud's pills, capsules and tablets of relatively small bulk, and his paper contains working formulæ for these as well. Mr. Philip Crewe was the contributor of the next three papers, which were a corollary to the foregoing, also from Messrs. Woolley's laboratories. All dealt with the determination of ferrous carbonate, first in regard to its estimation in saccharated carbonate of iron. Mr. Crewe studied the influence of phosphoric, sulphuric, and hydrochloric acids, both hot and cold, upon sugar, his object being to see to what extent the presence of sugar increases the consumption of standard bichromate in the estimation of the ferrous salt. Cane sugar does not appreciably increase the amount of bichromate, but invert sugar does, and levulose most of all. The author described his process for estimating saccharated ferrous carbonate in the second part of the paper; the determination of ferrous carbonate in Blaud's pills and capsules was described. In the third Mr. Crewe went more fully into the influence of organic matter—*e.g.*, honey, levulose, invert sugar, and glycerin—upon the standard bichromate in titration.

Ginger.

The pungent principle of ginger as investigated by Thresh and others is a somewhat indefinite mixture. Messrs. Henry Garnett and James Grier have now returned to the subject, but owing to an accident (that yielded at least one important result) a large part of the material upon which they were working was spoiled, so that the results were somewhat inconclusive. The pungent principle of ginger is proved to be phenolic in nature. The accident referred to was the mixture of the principle with a fixed alkali, and on returning to the mixture after some time the authors found that the pungency was entirely destroyed. This has enabled them to provide a test for the admixture of capsicum with ginger—namely, to mix the sample with a small quantity of caustic alkali, evaporate the alcohol, acidify, and wash out with ether. If pure ginger, the ethereal residue is free from pungency.

The Testing of Drugs and Chemicals

is, according to Mr. J. P. Gilmour, of Glasgow, a proper and necessary thing for every retail chemist to do. In his own characteristic way Mr. Gilmour submitted to the Conference the ethical and legal considerations upon which he based this view, and gave an exceedingly practical turn to these observations by a simplification of the conditions of testing. He showed what are the gains from systematic testing, and submitted the results of the examination of eighty articles, representing 2,445 samples, of which all but 371 were B.P. To these he added a series of interesting notes, the result of nearly twenty years' experience in systematic testing.

Infusion of Quassia.

Mr. Ernest Quant communicated some interesting observations in regard to this preparation when made with cold water and boiling water. In respect of keeping properties the cold-water infusion is not a bit inferior to that made with boiling water, in fact agar cultures with the boiling-water infusion showed 250 bacterial colonies per c.c. as compared with 150 given by the cold infusion. After many experiments, the author came to the conclusion that the only improvement that can be made in the official process is after straining the infusion to boil it for a few minutes and allow it to cool.

Brucea Antidysenterica.

The Wellcome Chemical Research Laboratories contributed three papers, the first being by Drs. Power and Salway on the fruit of the *Brucea antidysenterica*, the second by Dr. Salway on the bark of that tree, and the third by Mr. W. Thomas on the bark of *Brucea sumatrana*, the fruit of which is known as kô-sam seeds, and was reported on at the 1903 Conference by Power and Lees. The fruit and bark of *Brucea antidysenterica* are reputed in Abyssinia to be efficacious in the treatment of diarrhœa and fever. In the chemical examination of the fruit Drs. Power and Salway isolated a fatty oil, a small amount of resinous matter, and a bitter principle, these being the chief constitutents, and they are similar in character to those of kô-sam seeds. Dr. Salway's research on the bark showed that like the fruit it contains some bitter substances, but they could not be obtained in definite form. He obtained from it a phytosterol $C_{20}H_{31}O$. Mr. Walter Thomas examined the bark *Brucea sumatrana*, chiefly on the lines that Power and Lees adopted in respect of kô-sam seeds, and he found that it contains a much smaller proportion of bitter principle than the fruit, so that the fruit is to be preferred for medicinal purposes.

False Calumba Root.

The paper by Mr. S. Taylor, of Derby, dealt with the microscopic and other features of an adulterant of calumba root which has recently been detected. Microscopically it is distinguished from true calumba by the presence of sphœraphides and acicular raphides and absence of the isolated crystals which are found in true calumba, while it gives a deep red colour with potash solution and black with ferric chloride. Our abstract of the paper is illustrated with the author's drawings.

Sulphurated Antimony,

of the British Pharmacopœia, is still an article in demand, and although it is one of those medicines which tradition rather than intrinsic value keeps in use, it is just as well that it should be correctly described in the Pharmacopœia. This Messrs. Lloyd Howard and J. B. P. Harrison find is not done. For one thing, the residue after treatment of 3 grams with nitric acid is not 2 grams, but 1.75 gram at the most, while the official tests allow as much as 30 per cent. of anhydrous sodium sulphate to be present, because its existence therein had not been thought of. Nor is the compound readily dissolved by soda solution. The investigation upon which these observations were based was a good one, and the results justified the authors in the recommendations for the alteration of the B.P. characters and tests, these concluding the paper.

Fucus Vesiculosus

still persists as a remedy for obesity, the liquid extract being chiefly employed. Mr. F. C. J. Bird had to investigate a complaint that the preparation was devoid of iodine compounds, and on putting the matter carefully to test found that this is not the case. He told the Conference the precautions which have to be observed in testing, whereby undoubted proof is obtained of the presence of iodine.

Medicinal Resinoids

were the subject of a note by Mr. D. B. Dott in the course of which he recommended 70 per cent. alcohol for extraction in preference to the B.P. 45 per cent. menstruum. For dilution of the resulting extract he recommended a mixture of calcium phosphate, milk sugar, sodium phosphate, and magnesia, but for hydrastin he prefers sodium sulphate alone.

The discussions were exceptionally good, and we report them well.

Next year the Conference will meet in Aberdeen, with Mr. Robert Wright as President.

The Opium Market.

When we drew attention to the position of Turkey opium in this column in April last, we expressed the opinion that the prospects were for the maintenance, if not an increase in the high level of values then prevailing. Subsequent events have more than justified this assertion, as to-day the price of good druggists' opium in London is quite 7*s*. per lb. higher than in April, as the result of a series of sharp advances in primary markets. The cables and reports from our Smyrna correspondents, which we have published week by week, have indicated the leading features of the market, but those we publish this week clearly show that we are fast approaching famine prices, it being stated that buyers for the United States have paid the equivalent of 20*s*. 6*d*. per lb. for drug-testing 11 per cent., and that the market will in all probability shortly advance to 22*s*. Buyers are also advised to secure their supplies at best possible prices, or, in other words, place their orders without a price-limit. This announcement indicates a rise in Smyrna of fully 3*s*. per lb. since last week, to which the London market has responded to a partial extent, the price to-day for good druggists' opium being 20*s*. 6*d*. to buy, and little at that. The latest reports in regard to the crop place the yield at 5,500 cases, made up as follows :

	Cases.
Smyrna and Constantinople	4,000
Salonica	500
Stocks of old, about	1,000
	5,500

It is estimated that the above figures are about 1,500 cases below the world's average annual consumption, and as present stocks are everywhere relatively small the indications are that no serious decline can be anticipated until the autumn. It must not be forgotten, however, that prices are now at a dangerously high level, and if a period of stagnation should ensue for several weeks, sellers in Turkey would no doubt be anxious to realise. On the other hand, should any important quantity be purchased by America or the Dutch Government, higher figures would still be reached. To find a parallel with the present prices it is necessary to go back twenty years (1887) when the market for druggists' opium touched 20*s.* on the spot. In that year less than 2,000 cases were harvested. Again, in 1880, the price of fine druggists' opium touched 27*s.* per lb. with a crop of rather over 2,000 cases. That year of scarcity, however, was followed by the abundant crop of 10,000 cases in 1881, and the 1887 yield was followed by 8,700 cases in 1888, thus showing that, as a rule, a small crop is followed by an average and sometimes a large one. From 1896 to 1906 inclusive the Turkey crop averaged 6,600 cases annually, the highest known yield being 11,200 cases in 1904. The makers of opium alkaloids appear to have that market well under control, as may be judged from the fact that in this month alone they have raised the price of morphine on four occasions by 6*d.* per oz., the latest advance being announced to-day (Wednesday).

A Proper President.

Mr. Robert Wright, the new President of the B.P.C., was apprenticed to Dr. J. C. Thresh, when he was in business as a pharmacist in Buxton. Subsequently Mr. Wright studied at the School of Pharmacy, Bloomsbury Square, where in the 1880 Session he took certificates in all the subjects. He passed the examination in February 1881, but thereafter continued his studies at the "Square" School and took distinction in all the subjects for the Sessional Course, and the first bronze medal in practical chemistry. Mr. Wright passed the Major examination in October 1882. From that time he began original research. Since the Conference meeting in Leeds he and Mr. E. H. Farr have become associated in their researches on tinctures and other galenicals, and this co-operation has resulted in the contribution of many valuable improvements in galenical pharmacy, the more important being communicated to the Conference. Mr. Wright is in business in Buxton and is a member of the Board of Examiners for England and Wales. He is one of the most popular quiet men in English pharmacy.

An Official Blunder.

The "London Gazette" of July 19 contained an official announcement in regard to the King's staff of physicians. Sir Richard Douglas Powell, Bart., is appointed Physician in Ordinary in the room of Sir William Broadbent, Bart., deceased, and Dr. Bertrand Dawson, F.R.C.P., is appointed Physician Extraordinary. The blunder lies in the statement regarding the appointment of Honorary Physician in Scotland, Sir Thomas McCall Anderson, M.B., "in the room of Sir Thomas R. Fraser, M.D., deceased." Sir Thomas Fraser is happily not dead, but Sir W. Gairdner is, and Sir Thomas McCall Anderson has succeeded him. The Court Circular of July 22 made an appropriate correction, and it has since been explained that a clerk made the blunder. The most remarkable point about the whole matter is that the newspapers who a fortnight since dealt with the death of Sir William Gairdner did not discover the error when giving publicity to the new appointment.

B.P. Revision,

The method adopted by the British Pharmacopœia Committee of Reference in Pharmacy to find out which medicines are popular with subscribers is to make an analysis of prescriptions, and we reprint Mr. Hill's letter and list on pp. 115-6. This reminds us that a similar analysis was made by The Chemist and Druggist early in 1886, when we published an analysis of 10,000 out of 13,000 prescriptions which we received from subscribers. This analysis was suggested by one carried out by the late Mr. Ebert, of Chicago, who collected 15,000 dispensed in the State of Illinois. We found that the twelve medicines most frequently prescribed then were :

Spiritus chloroformi
Potassii bromidum
Vinum ipecacuanhæ
Spiritus ammoniæ aromaticus
Quininæ sulphas
Sodii bicarbonatas
Ammonii carbonas
Liquor ammonii acetatis
Glycerinum
Syrupus aurantii
Potassii bicarbonas
Spiritus ætheris nitrosi

The most popular proprietary articles then prescribed were vaseline, chlorodyne, nepenthe, Fellows' syrup, Benger's liquor pepticus and liquor carbonis detergens. For the last edition of the British Pharmacopœia a similar analysis was made by the late Mr. William Martindale, but the present is the first really fully official attempt to get at what doctors require, and the first time, as far as we recollect, that a special invitation to mention proprietary preparations has been made.

Otto of Rose.

Some features concerning the otto of rose market in Bulgaria this season deserve special comment, inasmuch as they may have an important bearing on the future course of values. It will be a surprise to many to learn that an attempt has been made among some half-dozen firms in Bulgaria to corner supplies of the new otto, but such a movement is foredoomed to failure for several reasons, which may be briefly stated as follows :

1. It is well known that for the last six years in succession the Bulgarian crops have been large.
2. Practically all the consuming markets are well supplied with old stock and most of the large consumers throughout the world have sufficient to last them for this season or more.
3. The stock of available old otto in Bulgaria is estimated at over 50,000 oz.
4. The new crop is fully an average one—over 90,000 oz. pure otto, and with adulterants will probably exceed 120,000 oz. when exported.
5. The price of the rose-petals, with few slight exceptions, was about the same as last year.
6. The yield of otto from the roses was this year nearly 30 per cent. larger than last year.

In the light of these facts it is difficult to realise how any combination is to succeed. The first object of the firms who joined together was to disseminate reports that the crop was a famine one, with the idea of establishing famine prices in Bulgaria, the cost of production or the demand being left out of the question. They next raised the price of new and old otto from 40 to 50 per cent. above last year's prices, and proceeded to buy all they could at high prices—viz., from 22*s*. to 25*s*. per T. oz. Their idea in paying high prices in Bulgaria is to sell cheaply for export, on the principle that the higher the price in Bulgaria the easier it becomes to sell sophisticated otto abroad. Already several parties are travelling West with their new stock, but as we have already indicated, buyers have now little difficulty in distinguishing between sophisticated and pure otto. It is reported that the present artificial firmness of the Bulgarian market is already weakening, and if little should be placed abroad by the parties manipulating the market, prices will again become normal.

The Japanese Pharmacopœia.

Enforcement deferred to January 1, 1908.

A CORRESPONDENT in Japan, writing in reply to our inquiry regarding a translation of the new Japanese Pharmaeopœia in German, which was rumoured to be in preparation, says, under date June 21, 1907 :

> A Japanese clerk in the employ of one of the German importing houses intended bringing out such an edition. He had had some pharmarceutical training in Germany and had been to all the big houses in Yokohama getting up a subscription-list towards the translation, but failed hopelessly at what might be called the "acacia gummi" fence. He has proceeded no further. Things are in a hopeless muddle with reference to the Japanese Pharmacopœia, and the authorities seem unable to give but the scantiest of information upon the translation which is being made, owing, no doubt, to the fact that it is quite unofficial. A Government memorandum appeared in the Official Gazette to the effect that a new Pharmacopœia had been published, and that all chemicals, drugs, and medicines being imported into the country after July 1 of this year would be required to pass the tests and standards mentioned therein. As no translation into any European language had been made the announcement created quite a commotion among the foreign importers of chemicals, and negotiations were carried on with the Government through the Yokohama Foreign Board of Trade asking that a delay in the enforcement of the law might be granted until such a translation was forthcoming. Accordingly the following notice was issued by the Board:
>
> Pharmacopœia Japonica.
>
> The standards enforced in the new edition come into force on July 1, 1907, but for the convenience of traders instructions have been given to permit the delivery, until January 1, 1908, of goods imported under the previous standards. This permission only applies, however, to goods imported prior to July 1, 1907. Much difficulty is being experienced in regard to new business through the absence of any translation. Enquiries have been made by several parties interested in the subject, but so far no definite statement has been available for general information. The committee have placed the difficulty before H. E. Yoshiwara Saburo, Vice-Minister of State for the Home Department, and have been informed that while the department does not propose to publish an official translation, the work has been entrusted to the Pharmaceutical Society of Japan, an organisation including among its members the experts who have compiled the new Pharmacopœia. An English translation has been in course of preparation for some months, and is now in the hands of the printers. The work is of a difficult nature, and it is probable that the volume will not be completed until August, possibly even later. The committee have, however, arranged to procure advance translations regarding any articles in which importers are specially interested, and applications in this respect may be addressed to the Secretary of the Board.

Our correspondent adds that the translation was expected to be ready on November 30, but he does not think it will be. He also states that it is not known in British trade circles out there what is meant by "chemicals, medicines, and drugs," which have to accord with the Ph. J. requirements, and he states that the action taken by the *C. & D.* in bringing the matter to the notice of the Foreign Office has given satisfaction.

Prescription Problem.

A CAPITAL response was made to the prescription problem set in THE CHEMIST AND DRUGGIST, July 13, p. 48. The script at first sight looks exceedingly difficult, but it seems to grow familiar the more one studies it. The prescription was sent to us by Mr. H. Vincent Dodd, 2 St. Andrew's Pavement, Stamford Hill, London, N., who, in sending us the following transcription, has had the advantage of consulting the writer of the prescription, and so settled for us one or two obscure points.

Mr. Ed. Davy,
21 F. Rd.
Tr. rhei co. ... ... ʒij.
Mag. carb. pond. ... ... ʒiss.
Sod. bic. ... ... ʒij.
Aq. (ad) ... ... ℥vj.

Sig.: ℥ss. 4tis.

Lot. pb sub. ... ... ʒiiss.
S.V.R. ... ... ʒj.
(Aq. ad) ... ... ℥viij.

Sig.: ℥j. to Oj. tepid water.

Mr. Dodd tells us that although "Lot. Pb. Sub." was written the doctor informed him that he meant liquor. We have not taken into account the name and address of the patient in judging the cards sent in.

First it should be noted that although the number who have supplied the correct transcription is very small, yet the proportion who have sent in solutions that would have resulted in the wrong medicine reaching the patient or incorrect directions being placed on the bottles is also small. For instance, those who gave the word "Lot." as "Liq." were correct in that that was what was required; but it was not the reading of the prescription, and should not have been sent without an explanation to show that the competitor had correctly noted this peculiarity. Again, in the directions for the mixture, many added the word "horis" after "4tis," which was supplying something that did not exist on the script. If it is considered advisable in such cases to supply missing words they should be bracketed, as in the above transcription.

With reference to mistakes in reading the ingredients of the mixture, one competitor gave the first as "Pulv. rhei co.," another added "Pruss. Ph." There were a few variations of the magnesia line, such as "precip.," "pur.," and "levis." These were a few errors in regard to the size of the lotion, four cards giving this as ℥iij., but a mistake like this is chaff-bait to old birds. The directions for the lotion gave some an uncomfortable uncertainty, a few reading the "Oj." as "Op." There was greater variety in the renderings of "tepid water," the following being the more curious :—

before washing
sæpe utend.
warm water
to form a lotion
pro solution
upon lint
pro oculis
of water
before using
for wash
M. nocte
utend. nocte
aqua dist.
pro re nata
hot water
ut pro douche
m.d.u.
upon wool
pro lotio

We have carefully gone through several hundred cards, and by a process of elimination have arrived at four correct solutions of the problem. We have therefore decided to award four prizes of 5*s*. each. The winners are :—

MR. G. GIBSON,
c/o Mr. A. W. Dawson,
56 Knight's Hill Road,
West Norwood, S.E.

MR. J. A. BUTTS,
c/o Mr. E. H. Taylor,
Woking.

MR. A. TYREMAN,
c/o Mr. F. P. Watson,
6 and 7 Bailgate, Lincoln.

MR. F. T. ROPER,
7 High Street,
Kington, Herefordshire.

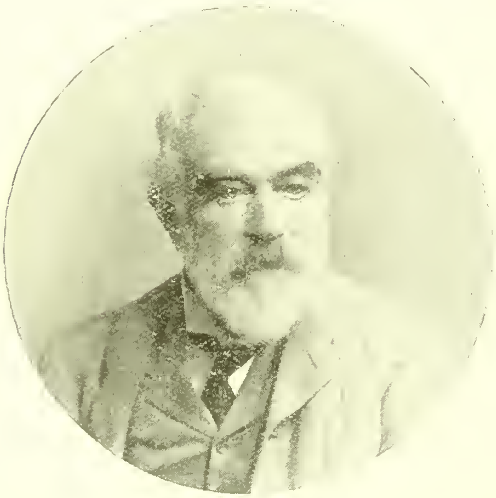
THE INDUSTRIES OF MANCHESTER:

Particularly those which are related to Pharmacy, with Historical and Personal Notes.

MANCHESTER is a corporate and parliamentary borough of Lancashire, and was elevated to the dignity of a city in 1847 by being made the see of a bishop, and confirmed by Royal Charter in 1853. Salford is on the west side of the river Irwell, but the two boroughs, connected by sixteen bridges, may be considered one city, of which there are over 550,000 inhabitants. Manchester is the acknowledged centre of the most extensive manufacturing district in the world. Its growth in wealth and influence during the last century is due to the development of the cotton-industry; in and around Manchester and Salford are situated two-thirds of the entire cotton manufactures of the United Kingdom. The convenience of access, considerably improved of late years by the construction of the celebrated Ship Canal, has made Manchester a centre for many other industries; among them are wholesale and manufacturing druggists and allied businesses, to which this article is solely devoted, the notes being arranged in alphabetical order:

Benger's Food, Limited,

Otter Works, Manchester, is, as we have mentioned in a previous article, an offshoot from the business of Mottershead & Co., which belonged to Mr. Standen Paine and the late Mr. F. Baden Benger, having been acquired by them in 1866. They were fellow-assistants at John Bell & Co.'s, Oxford Street, London, and in 1864 Mr. Standen Paine went to Manchester to manage Mottersheads' business, which then belonged to Mr. Roberts. Mr. Paine was afterwards joined by Mr. Benger. Mr. Standen Paine still attends to the direction of Benger's Food, Ltd. He was apprenticed to his father at Brighton, with which town his ancestors were associated for centuries. One of them proclaimed Queen Anne at Brighton in 1703. After his apprenticeship Mr. Paine was for six years with John Bell & Co., London. He passed the Major in 1858. His partner and friend, Mr. F. Baden Benger, died in 1903. Mr. Benger passed the Major in 1861, and his scientific attainments were recognised by Sir William Roberts, who was engaged in his researches on digestion, and wanted a collaborateur in his experimental work. Mr. Benger helped Sir William Roberts with his knowledge of the digestive ferments, and after much original work produced the infants' and invalids' food which bear his name, as well as liquor pepticus and liquor pancreaticus. At first these preparations were made at the Exchange Street shop, but owing to the growth of the food business, it became necessary to provide separate premises. In 1891 a private limited company was formed with a capital of 40,000*l*. In 1893 the retail business was disposed of to Mr. Blackburn and Mr. Jackson (see *C. & D.*, July 20, p. 92). Mr. Benger was president of the British Pharmaceutical Conference in 1888, having previously for some years been the hon. secretary of the Conference. On his death a public limited company was formed with a capital of 400,000*l*. The general manager of the Otter Works is Mr. A. H. Barlow, Ph.C., who is also a director. Mr. Barlow is a Manchester man, and was educated at the famous Manchester Grammar School. In 1884 he was apprenticed to Mr. John Standring, where one of his earliest duties was to manufacture pepsin for Sir William Roberts, who at that time made Standring's pharmacy one of his experimental quarters. Mr. Barlow studied at the Manchester College of Pharmacy at the time when Mr. Clayton was with Mr. Turner, and also at Owens College, passing both the Minor and Major in 1888. Mr. Barlow is an active member of the Local Executive Committee of the British Pharmaceutical Conference, and chairman of the Excursion Committee.


Mr. Standen Paine.

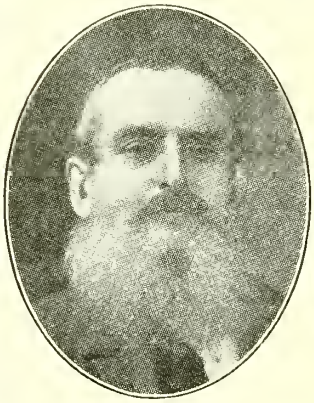
Mr. A. H. Barlow.

Blyton, Astley & Co.,

Eagle Laboratories, Lower Broughton. This business was founded by Richard Twemlow, forty years ago, in Upper Brook Street, Manchester, in the room over his retail shop, where he started the wholesale manufacture of chlorodyne and wormcakes. In 1885 the manufacturing business was bought by Mr. Thomas Bage Blyton, Ph.C., and transferred under the title of Thomas Bage Blyton & Co. to the premises in Lower Broughton, where the offices of the firm are now situated. The business was rapidly extended by the addition of the manufacture of jujubes and pastilles. In 1893 Mr. F. A. Astley, Ph.C., was admitted into partnership, and the title was altered to Blyton, Astley & Company. Mr. Astley had been apprenticed with Mottershead & Co., and after studying at the Manchester College of Pharmacy and Luff & Woodlands, London, passed the Minor in 1884 and Major in 1885. He was for a short time engaged in a retail business at Didsbury, which he founded, but did not find sufficient scope for his energies. Sugar and pearl-coated pills and pellets and effervescent preparations were now added to the list of manufactures, and later new premises were bought adjoining the original ones in Gordon Street, and marginal and porous plasters added. Mr. J. H. Blyton, who had been with the firm for some years, having, like his brother, taken the Major qualification, became a partner in 1898. In 1902 Mr. Astley died, whilst still a young man, since when the business has been carried on and extended by the two surviving partners, both of whom obtained their retail experience at Mottershead & Co.

Robert Gibson & Sons, Ltd.,

Carlton Works, Hulme, Manchester. Mr. Robert Gibson, the founder of this business, was born at Carlton-upon-Trent in 1832, and in 1845 was apprenticed to Dr. Pettinger, of Sutton-upon-Trent (afterwards of Manchester), who also had a chemist's shop at Newark, where young Gibson spent most of

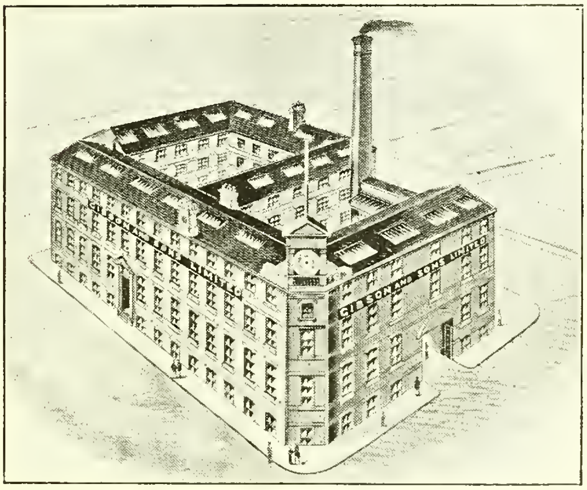

Alderman Gibson, J.P.

Mr. F. H. Gibson.

his time. In 1850 Mr. Gibson went to Manchester, and for two or three years was an assistant with Messrs. Mottershead & Roberts in St. Mary's Gate. In 1854 he opened a retail chemist's shop in Preston Street, and thirteen years later purchased a small building in Erskine Street, Hulme, where he commenced the manufacture of medicated lozenges. Success smiled upon his venture and he was soon compelled to make extensions. This was done by the purchase and alteration of cottages adjoining the works. Still the business grew, and in the end Mr. Gibson erected the large building now occupied by the company, which he called Carlton Works after his birthplace. Mr. Gibson became a pharmaceutical chemist as long ago as 1853. The business has a London warehouse at 4 New Zealand Avenue, E.C., and in the United States at 342 West Fourteenth Street, New York. The firm was incorporated in 1899 with a capital of 20,000*l.* Mr. Robert Gibson is the managing director, other directors being his sons—Mr. Frederick H. Gibson, Mr. Arthur A. Gibson (in charge of the London warehouse), and Mr. Wm. H. Gibson. The business is one of the largest exclusively devoted to the manufacture of chemists' confectionery and employs over 200 people. Mr. Robert Gibson has led an active life in the political and municipal world. After serving on the City Council since 1882 he was promoted to the aldermanic bench in 1893, and in 1897 filled the proud position of Lord Mayor of Manchester. Perhaps Mr. Gibson's services as chairman of the Gas Committee are the most appreciated, as will be understood by anyone acquainted with the importance of the subject to Manchester. He is also a Justice of the Peace for the City of Manchester.

Mr. Arthur A. Gibson.

Mr. W. H. Gibson.



Carlton Works.

Thomas Guest & Co.,

Carruthers Street, Ancoats, Manchester, are known to our readers as wholesale and export confectioners. The business was established in 1870 for the manufacture of medicated and general confectionery. Since that time constant additions were made to the factory and the equipment until all departments of the business, including jujubes, pastilles, and salines, were developed to a high degree. In 1903 the three large factories were totally destroyed by fire, and in consequence very severe dislocation of the trade resulted. The rebuilding was slow work, but now it is completed and all the new machinery in working order, the factory can claim to be one of the most perfect and up-to-date in existence. During the trying time when the factory was entirely dislocated many evidences of sympathy and consideration were shown by the drug-trade in this country and abroad, and, as showing the value of a reputation for supplying a good article, it is interesting to know that the old customers have been augmented by many new friends.

Thomas and William Henry,

East Street, Manchester, are known all the world over as the manufacturers of Henry's magnesia. The inventor was Mr. Thomas Henry, who was born at Wrexham in 1734 and, according to Mr. Slugg, was apprenticed to a surgeon-apothecary of that town. After that he filled the situation of assistant to Mr. Malbon, a visiting apothecary at Oxford, and then settled at Knutsford. After five years he removed to Manchester and succeeded to an apothecary's business in King Street. He died in 1816. In 1771 he communicated to the Royal College of Physicians of London his improved method of preparing magnesia, but had not at that time the intention of engaging in the manufacture himself. Some of his friends, however, urged him to supply his magnesia, and having been assured by several eminent physicians of the day that they saw no objection he set up a factory in Bale Street, where the magnesia is still made. The William Henry whose name is associated in the title of the firm was son of Thomas Henry, and qualified as an M.D. of Edinburgh and became an F.R.S. He assisted in the manufacture of the magnesia, and this naturally directed his thoughts in the direction of chemistry. He published an "Epitome of Chemistry," which passed through several editions. He died in 1836. Henry's magnesia is mentioned in the schedule of the Medicine Stamp Act, 1812, as liable to stamp-duty. The peculiar heaviness and smoothness of Henry's magnesia has never been successfully imitated, and so it comes about that a medicine invented so long ago as 1771 is in demand by both the medical profession and the general public.

Thomas Jackson,

16 and 18 St. Mary Street, Strangeways, Manchester. This business was founded by the late Mr. Thomas Jackson, Ph.C., who was also a founder of the Pharmaceutical Society. At first he devoted his energies to the retail trade, but between 1845 and 1850 he produced several specialities which afterwards developed into the present wholesale business. The best-known of these are the "Prince Albert Cachoux," "Benzine Rect.," and "Chinese Diamond Cement." Mr. Jackson died in 1899 at the age of eighty-three. Four of his sons became pharmaceutical chemists, the youngest—Mr. Urban Arthur Jackson, being his successor in the business. Mr. U. A. Jackson passed the Major in 1888, having previously taken his Ph.D. degree in Germany. One of his brothers—Professor A. H. Jackson—went out to Australia in 1886 as professor of pharmacology at Melbourne University. He had been very popular in Manchester, having been the President of the Manchester Pharmacy Students' Association. Another brother is the proprietor of the tooth-brush business of W Addis & Co., Hoxton, London.

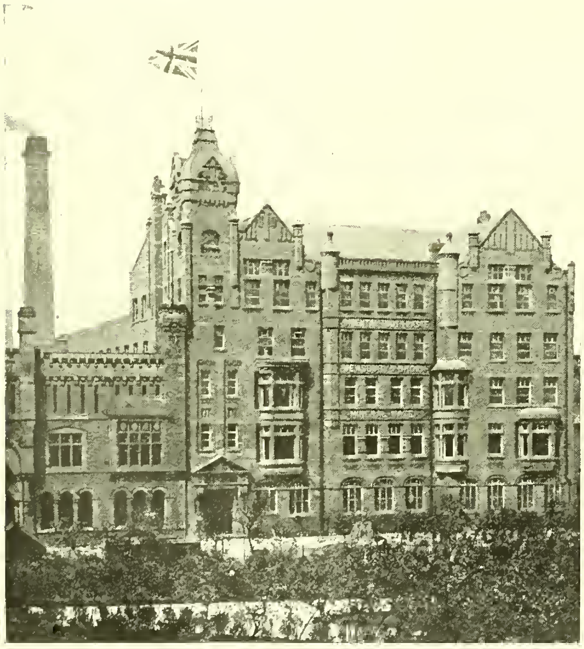
Jewsbury & Brown,

Ardwick Green, Manchester, whose name is familiar to the trade in connection with the Oriental tooth-paste, was founded at 113 Market Street in 1825 by two young men—Jewsbury and Whitlow—who had been fellow-apprentices with John Williams Gaulter, whom we referred to in the *C. & D.* in our notes on Messrs. Standring's business. The shop which they opened was one of three or four which had just been rebuilt, and were then called Egyptian Buildings. Mr. Jewsbury had two sisters, Maria Jane and Geraldine, who made a reputation as authors. He married his partner's sister. The partnership was dissolved in 1834, Whitlow starting as a chemist in Liverpool. It was before this that the firm began manufacturing aërated waters, which department now dominates the business. In 1845 Mr. Jewsbury, owing to a spinal injury, lost the use of his legs, and to carry on the business took into partnership William Scott Brown. The last-named, born in 1819, was the son of a Market Street hosier, whom Mr. Slugg remembered as a "bright, bonny-faced boy." He served a partial apprenticeship with Mr. John Lessey, a Piccadilly druggist, and was then bound to Messrs. Jewsbury & Whitlow, afterwards remaining as an assistant, eventually, as mentioned, becoming a partner. Mr. Jewsbury was an interesting character, one of his trade peculiarities being the extent to which he prided himself on his ability as a maker of plasters, a work at which he used to boast he had no equal. Mr. Scott Brown developed the business very much, and when Mr. Jewsbury retired became the sole partner. A separate aërated-water factory was built in 1856, and again in 1861 large premises in Downing Street were taken for business purposes. We have referred in a previous article to Mr. Scott Brown's work in pharmaceutical politics; how he was elected to the Council of the Pharmaceutical Society and became a Vice-President in 1872. He was a bachelor, and when he died in 1891 the business devolved on his nephew, Mr. William Stones, who had had the control for some years previously, having been admitted as a partner in 1874, two years after qualifying as a chemist. At that time Mr. Robert Bardsley had charge of the Downing Street works, and he was taken into partnership by Mr. William Stones. In 1894 continued expansion of the business compelled the firm to erect the present handsome building at Ardwick Green, which was further enlarged in 1903. The retail business in Market Street was closed in 1896, the prescription-books being transferred to Messrs. Woolley's pharmacy at 69 Market Street. The present partners are Mr. William Stones, his sons Mr. Lionel Stones and Mr. Wilfred Stones, and Mr. John Bardsley. The last-named is the son of Mr. Robert Bardsley who died last year. The firm's chemist is Mr. William Kirkby, F.C.S., F.L.S., Ph.C., the hon. secretary of the local executive of the British Pharmaceutical Conference. Mr. Kirkby was apprenticed with Messrs. Wright & Barnaby, Oxford Street, Manchester, which business is now carried on by two former assistants of Messrs. Woolley—Mr. C. Middleton and Mr. J. Sumner. Mr. Kirkby passed the Minor in 1881 and the Major in the following year. He was the predecessor of Mr. James Grier as lecturer and demonstrator in pharmaceutics at Owens College, and has views on education, his university curriculum for pharmacists being outlined in the *C. & D.*, February 21, 1903, p. 299. Mr. Kirkby is also the author of a book on "The Evolution of Artificial Mineral Waters," and another for medical students entitled "Practical Prescribing and Dispensing."

Mr. W. Stones.

Mr. Lionel Stones.

Mr. John Bardsley.



Ardwick Green Works.

Thomas Kerfoot & Co.,

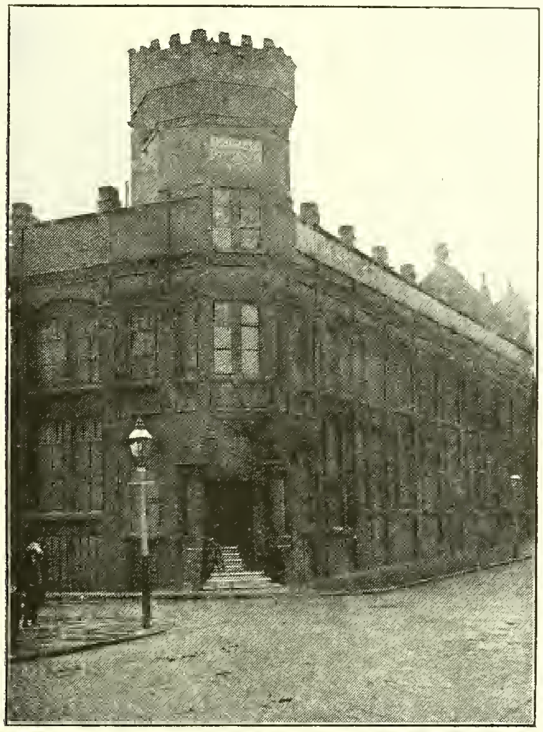
Bardsley Vale Mills, Ashton-under-Lyne. Although we have so far confined our remarks to businesses in Manchester, we feel obliged to stretch a point in the case of Messrs. Kerfoot, for the reason that the business was until recent years carried on in Manchester and that Mr. Kerfoot is auditor of the accounts of the general local committee. The origin of the business is traced back to 1757, Mr. Kerfoot in the 'sixties buying a business which had been established in that year. It was about 1870 that Mr. Kerfoot started making granular preparations at a small factory at Hyde, and a few years afterwards, in new premises at Berry Street, compressed tablets were turned out. In 1887 the retail business was disposed of, and since then only a wholesale and manufacturing trade has been carried on. About ten years ago a fire at the works, at that time situated at Chester Street, Oxford Road, decided Mr. Kerfoot to move out of the city, with the result that the works at Bardsley Vale were taken. To-day some three hundred people are employed in the business, which has an enviable reputation for lozenges, pastilles, compressed drugs, pills, granular preparations, and salines, these being the special lines of the firm. Mr. Thomas Kerfoot is a pharmaceutical chemist: he passed the Major in 1863. He is assisted by his son, Mr. E. H. Kerfoot, in the management of the business. As before stated Mr. T. Kerfoot is the auditor of the local committee, Mr. E. H. Kerfoot being also on the active list of the executive committee.

William Mather, Ltd.,

Dyer Street, Hulme. In the first number of The Chemist and Druggist, published on September 15, 1859, there is an advertisement by William Mather, which states that the business was established in 1826 and carried on in Manchester and London. A large wholesale drug business was carried on in conjunction with the manufacture of plasters and druggists' sundries. Mather's feeding-bottles were the pioneers of cheap baby-feeders, and were sold in enormous quantities. Mr. William Mather died in 1880 and the business was then divided. The London agency, which had been under the management of Mr. Suart, passed to Messrs. Mace & Haldane, the drug-business in Manchester was acquired by Messrs. Oldfield, Pattinson & Co., whilst the manufacturing part of the Manchester business was taken over by Mr. Mather's son, who died in 1895. In 1894 the latter part had been made into a private limited company. One of the directors was Mr. A. J. Pidd, who is well known in connection with the British Pharmaceutical Conference. He is hon. treasurer of the local committee. Mr. Pidd qualified as a chemist in 1873 and is the present managing-director of the company, whose Royal Balsamic Plasters have warmed the chests of millions of the human race.

Oldfield, Pattinson & Co.,

New Bridge Street, Strangeways, Manchester, is owned by Mr. A. C. Oldfield and Mr. T. R. Pattinson. The firm originated in 1880, the nucleus being the drug and chemical portion of Mr. W. Mather's business as stated above. Mr. Oldfield had been manager of this department of Mather's business and, in conjunction with Mr. Pattinson, acquired it. Between them they have built up one of the finest wholesale druggists' businesses in the north. Until recently the warehouse was situated in Todd Street and the laboratory at Bent Street, Cheetham. The Todd Street premises being required for railway extension, Messrs. Oldfield, Pattinson & Co. had to look round for other buildings. They were fortunate in obtaining a large building in New Bridge Street, which had been used as a printing-works. These premises are not far from the Victoria Station, on the Lancashire and Yorkshire Railway, which is the busiest station in Manchester for goods traffic. The building is excellently lighted, and, with adaptations, forms an ideal home for the firm, warehouses, laboratories, and offices being all together instead of being scattered as before in various buildings. The writer was recently taken over the premises by Mr. Pattinson, and was much impressed with the orderly arrangements that have been made, bearing in mind that it is only since January that the removal from the old premises began. The room which was formerly the editor's sanctum (the previous occupiers were newspaper proprietors) is now used as a store-room for essential oils. The pharmaceutical machinery is modern, and includes surface evaporators and machines for milling ointment. In the basement is a large store of crude drugs, these including hundreds of bags of cascara sagrada. Both Mr. Oldfield and Mr. Pattinson are members of the local committee which has entertained the visitors to the Conference this week.


[*Photo Cleworth.*

Oldfield, Pattinson & Co.'s Works.

Mr. Oldfield.

Mr. Pattinson.

B. Robinson & Co., Ltd.,

Church Street, Pendleton, Manchester, was founded by the late Alderman Benjamin Robinson, who opened a shop at the corner of Broad Street and Cross Lane, Pendleton, in 1855. He had some original ideas in pharmacy and invented the concentrated waters which, when diluted, make the pharmacopœial aromatic-waters. These were advertised in the *C. & D.* almost from the commencement and have become very popular with the drug-trade, which soon appreciated the convenience of the concentrated-waters. The next development was the manufacture of the British wines primarily with the object of producing a pure and trustworthy orange-wine for quinine-wine. Other wines were afterwards made, and to-day the company make large quantities of all British wines besides the newer coca, and beef and malt wines. The retail pharmacy was sold in 1882 to Mr. T. R. Jeans, brother of Mr. A. Jeans, who carries it on as Jeans & Co., and has much extended the business. Meanwhile Alderman Robinson had built premises in Church Street, Pendleton, which were specially devised for the manufacture of his specialities. The business was converted into a company in 1901, the management devolving upon Alderman Robinson's sons. Before his death in 1903 Alderman Robinson had practically withdrawn from the business, and devoted himself to public life. He was Mayor of Salford in 1889-90, and it fell to him to lay the foundation-stone of the Royal Technical Institute, of which an illustration was given in the *C. & D.*, July 13, p. 60. The memory of his public work in Salford is kept green by a marble bust, which was erected in the Technical Institute, and also by his bequest of 500*l.* with which scholarships are endowed in connection with the Institute.

James Woolley, Sons & Co., Ltd.,

Victoria Bridge, Manchester. As mentioned in a previous article, this company traces its origin back to 1796, the late Mr. James Woolley having acquired a business founded by Mr. R. H. Hargreaves at that date. The original premises were on the site of the retail pharmacy in Market Street. Mr. Hargreaves was also a drysalter, who did a large trade in chemicals and dye-stuffs with the calico-printers, bleachers, and dyers of the district. In the offices of Messrs. Woolley is preserved an invoice of some turpentine bought from Mr. Hargreaves in 1838, which is interesting as showing in a vignette a view of the chemical works which existed at that time in connection with the business. Mr. Hargreaves retired in 1844, and was succeeded by the late Mr. James Woolley. Mr. Woolley served his apprenticeship with Mr. Samuel

Mr. C. A. Johnstone.

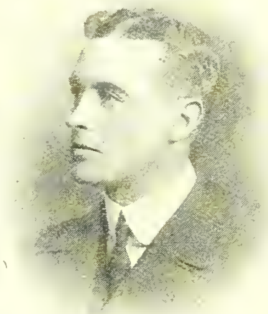
Mr. E. J. Woolley.

Mr. A. C. Vallance.

Mr. W. Lane.

Dean, a Piccadilly druggist, and in 1833 opened a shop in King Street, and subsequently a branch in Great Ducie Street. When in 1844 he acquired Mr. Hargreaves' business, the business of these two shops was transferred to the Market Street premises. This business was greatly developed, especially on the wholesale side, a second shop being added and additions made in the rear of the premises to accommodate the growing trade. Mr. James Woolley died in 1858, his eldest son, Mr. George Stephen Woolley—the senior director of the present company—carrying on the business. In 1868 he was joined by his brother, Mr. Hermann Woolley, and in 1872 the title of the firm was changed to Messrs. James Woolley, Sons & Co., Mr. Harold Woolley and Mr. C. A. Johnstone being taken into partnership. Mr. C. A. Johnstone was apprenticed at Annan, and went to Messrs. Woolley's in 1854. His fiftieth anniversary was celebrated in 1903, when an illuminated address was presented to him at a dinner and smoking-concert. On March 17, 1872, the premises in Swan Court, behind the Market Street shop, were partly destroyed by fire, and the manufacturing departments were in consequence removed to new premises in Knowsley Street, Cheetham, where laboratories and drug-mills were erected. The trade increased so rapidly that in 1879 an additional laboratory was built and further machinery put down. In 1889 a sad accident occurred, in which Mr. Harold Woolley lost his life through inhaling nitric acid fumes. Mr. E. J. Woolley, son of Mr. G. S. Woolley, joined the firm in 1891. He passed the Major in 1888 after a successful career at the "Square." The business of the firm continued to increase, and on the expiration of the lease of one of the warehouses in Swan Court it was decided to build an entirely new warehouse, designed in every detail for carrying on in comfort the business of wholesale druggists. The result was that the present handsome block of buildings at Victoria Bridge was built and opened in September 1892. The situation is one of the most central that could be chosen from a business point of view, and the premises, from their size and striking appearance, form a landmark of Manchester. We described the arrangement of the building pretty fully in THE CHEMIST AND DRUGGIST at the time. Since then additions have taken place which have made the premises even more suited for business purposes than before. In 1895 a limited company was formed with a capital of 150,000*l*., the directors being ~~the four~~ partners of the old firm. This year the directorate has been increased by the addition of Mr. W. Lane, Mr. E. S. Johnstone, Mr. J. H. Franklin, and Mr. A. C. Vallance. Mr. Hermann Woolley has ceased to take an active part in the business, but still remains a director. Mr. William Lane, manager of the warehouse, has been with Messrs. Woolley for thirty-six years. He was apprenticed with Mr. Long at Bristol some forty-three years ago, a fellow-apprentice having been the late Mr. Hodder, who is credited with being the first "cutter" in the drug-trade. Mr. Lane had further experience in the South of England before he joined the staff of Messrs. Woolley thirty-six years ago. He takes a good deal of interest in local pharmaceutical affairs, and apart from business is active in church and scholastic matters. He was a president of the Manchester Chemists' Assistants' Association, to which we referred in a recent article (*C. & D.*, June 29, p. 957), and is at present a member of the Council of the Manchester Pharmaceutical Association. Mr. E. S. Johnstone is a son of Mr. C. A. Johnstone, and has been for many years engaged in the laboratories in supervising the manufacture of the pharmaceutical products. He was apprenticed with Messrs. Woolley. Mr. J. H. Franklin has spent his whole business life with Messrs. Woolley, and for thirteen years has been in charge of the manufacturing departments and laboratories at Knowsley Street. He studied for the Minor at the Manchester College of Pharmacy, and passed in 1888. The Major was successfully negotiated in 1890 after study at the Northern School of Pharmacy, the Manchester School of Technology, and Owens College. In his younger days Mr. Franklin was very fond of athletics, and for seven or eight years was enthusiastic over mounted infantry work. He is chiefly known to Conferences by his splendid tenor voice, and his singing has been a feature of the concerts for a time. Mr. A. C. Vallance is the sixth son of the late Mr. George Vallance, of Mansfield, and was educated at the Mansfield Grammar School, where he became captain of the cricket eleven. He was then apprenticed to the late Mr. S. J. Potts, Mansfield, and passed the Minor in 1886 after a course at Luff and Woodland's School, where he captured the bronze medal in chemistry and pharmacy. The Major was passed in 1888 after a session at the "Square." Then came a round of West-end and Continental experience with Mellin's, Piccadilly Circus, London, W.; J. Lloyd Bullock's, Hanover Street, London, W.; Dr. John Jarvis, Pau, Basses-Pyrénées; and Roberts et Cie., Rue de la Paix, Paris. In 1889 Mr. Vallance joined the staff of Messrs. Woolley, and became the representative in the Midlands. Apart from the business, in which Mr. Vallance takes such a keen interest, he has been an officer for nine years in the 2nd Volunteer Battalion the Sherwood Foresters, Notts and Derby Regiment, and for the last three years captain in command of the cycle company. As a Freemason Mr. Vallance is a P.M. of the Forest Lodge, 1852, and a P.Z. of the Forest Chapter. In regard to Mr. G. S. Woolley, some particulars of his career will have been gleaned from previous articles. He is held in affectionate regard by the pharmaceutical craft of Manchester, and his advice on business matters is as valued as it is freely given to those who desire it. He was a member of the Pharmaceutical Council for several years, and while he held that office was one of the most diligent workers, and by no means treated the position as a sinecure. He was not afraid to speak, had sound knowledge of Society business, and his counsel was valued by his colleagues. What the Society lost through his retirement the Manchester Pharmaceutical Association gained, for there is no more loyal supporter of that body than its president.

MR. J. H. FRANKLIN.



MR. E. S. JOHNSTONE.

AT VICTORIA BRIDGE. [*Photo Cleworth.*

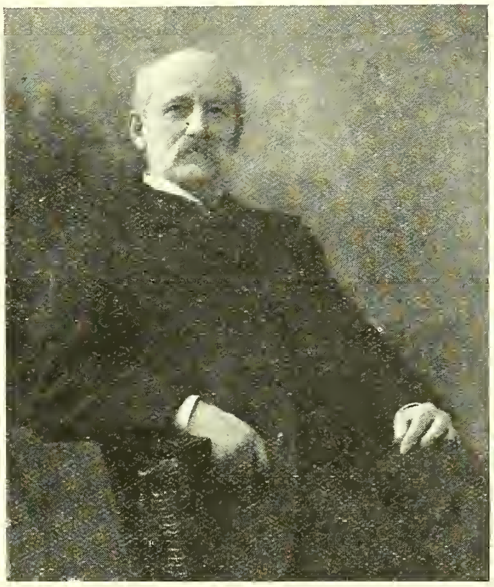
AMONG the exports from the port of Alexandretta during 1906 were 463 tons of albumen and egg-yolks (chiefly to France), valued at 23,150*l*., 404 tons of galls (mostly to United Kingdom, France, Germany, and Turkey), 9 tons of opium (product of Malatia), 27 tons of scammony-root (chiefly to the United Kingdom and Turkey), and 38 tons of yellow wax (mainly to Germany).

Mr. H. Kemp,
Chairman of Executive.

Mr. F. W. Bates,
Vice-President.

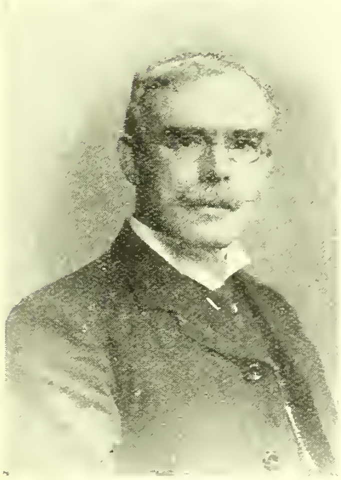
Mr. F. A. Ringer.

Mr. James Kidd.



Mr. G. S. Woolley,
President.

Mr. John Wild.



Mr. W. Kirkby,
Hon. Local Secretary.

Mr. J. Cleworth.

Mr. J. Woodruff Walton.

PROMINENT MEMBERS OF THE B.P.C. LOCAL COMMITTEE.

A Holiday Fantasy.

IN a provincial city, in a street a little removed from the throbbing heart of it—not that the throb was ever of the most robust type, for we are speaking of an ancient and a cathedral city, and the pulses of such are wont to beat with a dignified and stately movement, like the pendulum swing of a grandfather clock—well, in such a place there dwelt an elderly man, a chemist by trade, together with his wife and daughter, and one assistant.

It was Saturday night, and the hands of the clock in the upstairs sitting-room pointed to 11.15. The shop had been closed some three-quarters of an hour previously, and all the household but the old man had retired to bed; and he, having scanned the evening paper, sat in his easy chair, enjoying a peaceful doze before the fire. He had been thinking about some letters from daughter and son, and also sister-in-law, endeavouring to beguile him away for a brief holiday from the daily grind of the pestle and mortar; but, no, however tempting, it would not do: the old refrain must be sung again—

"There is a good time coming, boys; wait a little longer."

Peaceful drowsiness overcame the weary man. Ah! was it a bluebottle fly that tickled his right ear and would not be repulsed, but whose repeated attacks awoke him to semi-consciousness? No. A bluebottle does not chuckle; and there was a chuckle—such a queer little chuckle, too—combining in its soft cadences something of his little granddaughter's merry greetings with the cooing of the ringdove in the woods and the chirp of the cricket on the hearth. Whence came the sound so strange?

A moment's pause, please. *I* am the old man, and henceforth relate the rest of the story.

Turning my head to the right, there, seated upon the edge of the table, I saw (you will say I imagined I saw; well, we won't quibble about it) the queerest little figure, holding in its right hand a stalk of bearded barley, with which my aural appendage had been tickled into sensation. I say "its hand," because for the life of me I could not say to which sex the stranger belonged. Another chuckle, and I gasped out, "Oh, good evening," adding lamely, "may I say 'sir,' or 'madam,' or 'miss'?"

"Boo," was the instant reply just as my little granddaughter Gladys says it). "You may call me Belladonna, for I am the Fairy Goddess of Pharmacy, and come from Fairyland, where sex does not count for anything."

Here let me endeavour to give some idea of this grotesque being. Belladonna seemed to give an impression that when standing upright some 12 inches would be the maximum stature. The twinkling eyes first fixed one's gaze: they were little black beady dots, dancing with fun, and yet they could look pensive when the long eyelashes drooped over them. Perhaps they were really tiny ripe belladonna-fruits. How they looked you through and through! 'Twas delightful, yet uncanny. The other features seemed made up of different parts of plants and flowers used in the healing art of humans, wondrously blended into a benign and fascinating whole. The headdress was an inverted belladonna-flower with a green fruit of the same, like a button, at the top. A loose garment gathered in about the waist, and confined there by a belt of bryony, came down to the knees; black stockings embroidered with scarlet poppies and white shoes with black buttons (they were tiny belladonna-fruits) completed the attire.

"For what purpose have you honoured me with this kind visit?" I asked as sweetly as I could. Belladonna cooed out, "Oh, I came to invite you to take a holiday—a trip to Lakeland, or to Gladysland in Kent, or, say, to the Channel Islands or down the Mediterranean."

I gasped, "Oh, indeed!" But Belladonna was not to be interrupted when once started on the theme, and there followed such a torrent of eloquent rhapsody upon the delights of unbending from the round of daily toil that all solid ground of caution was swept from under my feet, and I exclaimed impulsively, "It is years and years since my good wife and I had a holiday together. Could we three home birds really get away together? Where's the time and where's the money, and what will make up for the loss of the honey while the master's away?"

Belladonna sprang to her (or his) feet, danced a hornpipe (the piano in the next room accompanying in a subdued key), then, plumping down again, replied, "Fiddle-de-dee! You make mountains of moleheaps and boils of pimples. You shall all go. Now, be a dear old man—meet me at the railway station about 9.15 on Monday morning—all of you. When you wake you will find your clothes laid out, your luggage packed, your purses full, and all arrangements made for your absence. When we meet I will tell you where you are going to. I give you just two minutes to decide: I can't stay, for" (waving the stalk of barley) "I must be off to make some barley-water with this for a dear invalid."

To gain time I replied, "Oh, that won't make much."

"Silly fellow!" retorted Belladonna; "we little people can make gallons and gallons from one little stalk."

I closed my eyes only for a few seconds to think; then the room-door opened quickly, and a voice roused me to instant attention: "The night-bell has rung thrice, father."

I ran down and opened the door, to find a girl, just tall enough to reach the bell, with a bottle in her hand. "Oh," she said, "please will you tell mother how much of this stuff she should give a baby six months old?" The stuff was bought at the drug-stores earlier in the day. On my return upstairs Belladonna had gone, and I remembered that nothing was said as to *which* station was to be the meeting-place on Monday. So I have not mentioned the subject to my wife!

Cochineal-cultivation.

By C. J. SAGE.

WHILE in the Canary Islands recently I was able to gather a few details of interest regarding the decaying industry of cochineal-production in Grand Canary.

The preparation of the cactus-plants on which to rear the insects is the most important operation in connection with the industry. Well-tilled soil is needed with at least 2 ft. of good earth at the surface, and in this cuttings of *Nopalea coccinellifera* are inserted, about a yard apart, in rows 2 yds. wide, and carefully tended and manured for about two years before they are ready to receive the insects. Ammoniacal manures are the only ones needed, the soil containing sufficient phosphates and potash as a rule.

If it be a rainless season the young insects are dusted on to the plants, but more often a small handful of "madres" (the female insect) are sewn up in bags about 12 in. by 6 in., made of coarse porous material like muslin; these bags are then hung for a short period on the plants in turn, and soon the young insects spread over the stems. The male insect is quite inconspicuous, but it has wings; the female is not much larger, but has no wings. After fecundation the female increases tremendously in size, and forms several thousand eggs, which remain in the body of the female after death and hatch out at a later period. The young insects are smaller than a pin's head at first, but grow rapidly, and the crop matures in six or eight weeks. When fully grown the "cocci" are collected in bags and killed with sulphur-fumes, which leave the insects with the white "silver grain" appearance which is natural to them.

Great care is taken to preserve some of the "madres" for the purpose of sowing the plants next season, and to do this some are selected and kept in a room with a temperature not less than 85° F., for a rainy season would wash the young insects off the plants and destroy the prospects of the next crop. Once the mature insects become fixed to a plant they do not move under ordinary circumstances. If a live insect is taken from a plant and squashed, it yields a crimson juicy liquid, but care is taken in preparing the insects to dry all this up without damaging them.

For many years this important industry has been diminishing owing to the use of aniline dyes. In 1869 the exports of cochineal from the Canary Islands were valued at 790,000*l.* for the year, while in 1874 the value dropped to 430,000*l.*, and in 1892 to only 50,000*l.* At the present time the value per lb. is less, and that makes an even greater deficit.

Thomas Tyrer, F.I.C., F.C.S.

President of the British Pharmaceutical Conference.

SINCE its foundation in 1863 the British Pharmaceutical Conference has drawn four presidents from chemical industry—viz., Mr. John Williams, of Hopkin & Williams, in 1884; Mr. E. C. C. Stanford, of the North British Chemical Co., in 1892; Mr. T. H. W. Idris in 1903-4; and Mr. Thomas Tyrer in 1907. All the other presidents have been retail or manufacturing pharmacists, and of the four named the only one not a pharmacist by training is this year's President.

Thos. Tyrer

In pharmacy we hesitate to break away from established custom. Unwritten rules grow and become hallowed in our systems. We abide by them because we think it is better so, and but rarely are they departed from. When that is done in the matter of office we pay the highest possible compliment to the man who is elected to the office, and recognise some exceptional merit in him. This compliment the British Pharmaceutical Conference has paid to Mr. Thomas Tyrer, a chemist who is a cosmopolitan personality in the chemical world, and has been closely identified with the commercial and industrial sides of pharmaceutical chemistry for forty-five years. Justification of Mr. Tyrer's present position is uncalled for, since he has justified it by his conduct of the Conference business throughout the year, and the freshness of view that he has brought to the chair during this week's meeting in Manchester; but when one comes to deal with the man and his accomplishments, there is the difficulty that he has figured so prominently in important events during the past quarter of a century that it feels like telling an old tale to write of them. It is common knowledge how he has been identified since their inception with the Institute of Chemistry and the Society of Chemical Industry, serving the latter as Secretary of the London Section for many years, later as President of the Society, and in one capacity or another during the whole six and twenty years of its existence. As Chairman of the Chemical Section of the London Chamber of Commerce he directed the movement begun in 1886, so beneficial to the export drug-trade of this country and her Colonies, which resulted in the granting in 1889 of drawback on exportation of alcoholic preparations. From that arose the agitation for free use of untaxed alcohol in manufactures—a movement which also has been crowned with success. This latter consummation, perhaps more than any other, revealed the true character of the man. It was very closely related to his own business; he knew everything that was going on behind the scenes, and not a few envied him his opportunities for commercial advantage. "I expected," said one keenly interested in the subject, "when the Alcohol Committee's recommendations were legalised that we should find Mr. Tyrer ready with a scheme for himself. But I was wrong. He is the sort of man who does not take advantage like that. 'Do as you would be done by,' seems to be his motto." One could mention other instances in Mr. Tyrer's career in which similar unselfishness has been exhibited.

Mr. Tyrer is a Wolverhampton man. He was born in that hardware town in 1844, and was educated in his father's school, where at one time a Dr. Richardson gave lectures in chemistry which inflamed the spirit of the schoolmaster's son. When he was fifteen, a Mr. Wildsmith started what was supposed to be a chemical-factory on the canal in the neighbourhood, and having some acquaintance with the schoolmaster he ascertained that young Tyrer was daft about chemistry. That gave him the lever for getting a good premium from Tyrer *pere*, and one morning the lad found himself in the "factory" on the canal. A sorry place it was, without apparatus, and a solitary Irish labourer to constitute the staff. What the young chemist learnt there in two years he now speaks about with sorrow, but we cannot help thinking that it was splendid groundwork. It began with bricklaying and other work requisite in installing apparatus, and included various processes, always on the cwt. or ton scale, so that he was prevented from thinking in grains, which is a valuable asset to begin with. After these two years Mr. Tyrer came to London in 1861 to study under Professor Hofmann at the Royal College of Chemistry (connected with the School of Mines), and among his fellow-students were David Howard, Carter Bell, Martius, Groves, J. Herschel, Mills, Roberts-Austen, Volhardt, and others. He also attended Huxley's lectures on biology and Tyndall's on physics.

It became necessary at this period that the young student should earn his own living, hence his course at the Royal College of Chemistry was shortened, and after one or two interviews with the late Mr. John May and the late Mr. W. G. Baker he was in 1862 installed at their works in

Battersea as a chemist. Since then his life has been devoted to the production of pharmaceutical and technical chemicals. He is now the managing director of Thomas Tyrer & Co., Ltd., Stratford.

We mentioned recently that while at Battersea Mr. Tyrer was a lecturer in chemistry. This was at the Working Men's Institute, and he was a recognised lecturer under the South Kensington Science Classes scheme. Mr. J. C. Buckmaster was the inspector, and he gave high testimony to Mr. Tyrer's efficiency as a teacher. Mr. Tyrer does not blush when he tells that his teaching experience helped to keep the technical pot boiling. He married, and there is nothing he is so proud of as his wife, who has aided him nobly all through his career of more than forty years, especially in the early work connected with the Society of Chemical Industry. This connection arose in a curious way. One evening in the 'seventies there came to his home a lad who intensely desired to be a chemist. This was Mr. W. Douglas Herman, the son of a well-known artist. On Mr. Tyrer's advice he went to study under Hofmann, and after the course took a position as technical chemist in Pilkington's great glassworks at St. Helen's, where he still is. His brief interview with Mr. Tyrer must have been a lasting memory to him, and it was recalled to the older man in 1881 when he got a telegram from Manchester with some such words as these :

> Will you be London Secretary to the Society of Chemical Industry?

Mr. Herman had mentioned Mr. Tyrer to the Secretary, Mr. Geo. E. Davis. In the previous December the Committee which met in Manchester had decided to found the "Society of Chemical Engineers," but Mr. Davis made a slip in his telegram—one of those happy slips which sometimes mean so much. In this case the accidental title was adopted at the meeting held in Burlington House, London, on April 4, 1881, and Mr. Tyrer became Hon. Metropolitan Secretary. There is a tradition that "Who's Tyrer?" was a common query then ; it seems quite archaic now, but it helps to fix the fact that Mr. Tyrer had taken no public part in chemical affairs up to 1880. In those days he was more than a secretary to the Society ; above all, he was its music master (he is a most ardent musician and can sing a good song). "Tyrer" was always trusted to get up a smoking-concert or anything to promote friendliness and good feeling. On one occasion he sang a new version of "Ye Leather Bottel," written by the late Walter Weldon. "We give the words of these most unscientific verses, but the mere reading of them can convey no idea of Mr. Tyrer's inimitable rendering, or of the bursts of merriment with which the various hits were hailed." Thus wrote the *C. & D.* of July 14, 1883. We shall not venture to repeat the verses, but it is worth recalling that at one of these early convivialities of the S.C.I., which Mr. Tyrer had to arrange on the spur of the moment, the starting-point was given to him by a distinguished chemist, who said to him, "Get Ramsay to whistle," and beautifully did the young Scotch chemist do it, accompanying himself on the piano. The late Sir William Perkin (an excellent violinist) also aided him on more than one occasion in orchestral combinations. During the first ten years of the S.C.I. Mr. Tyrer acted as Metropolitan Secretary, and he was made Chairman of the London Section at the end of the decade. His work was so well thought of that his friends in the Chemical Society, Pharmaceutical Society, Institute of Chemistry, Society of Chemical Industry, and the London Chamber of Commerce marked the end of the decade and his migration to Stratford by presenting him with a silver salver and purse of sovereigns. The late Sir Frederick Abel presided at the meeting in Burlington House, at which the presentation was made, and he, with the late Mr. E. Rider Cook, Mr. David Howard, and Sir Henry Roscoe spoke flatteringly of Mr. Tyrer's services to his *confrères*. This was on January 5, 1891. Fourteen years later a similar honour was again conferred upon him when he was entertained to dinner at the Trocadéro Restaurant on May 25, 1905, and presented with an address, and silver tray and tea and coffee service in recognition of "esteem and gratitude for the arduous, unselfish, and disinterested manner in which he has worked for many years to the benefit of the chemical industry of the United Kingdom, with which his name is so prominently associated, and especially for his efforts to obtain untaxed alcohol for industrial purposes." No doubt Mr. Tyrer ranks this as the highest compliment that has been paid to him, for the Departmental Committee on Industrial Alcohol had completed its labours, and this marked the end—perhaps it would be better to say the penultimate—of the long agitation which he led ; but we are inclined to think that the Presidency of the British Pharmaceutical Conference is not less dear to him. In 1896 he was President of the Society of Chemical Industry, and he made that the occasion also of a review of the industrial alcohol question. Now in his new presidential office the fiscal problem has been settled, and a greater one presents itself in how pharmaceutical chemistry may get the fullest advantage from the Spirit Sections of the 1902 Finance Act and the Revenue Act of 1906. His presidential address this week really anticipates this in the large subject "Research," but it also serves to show the broad outlook which Mr. Tyrer has of chemical science in its application to British commerce, and the exhaustiveness with which he attacks problems akin to his daily work.

In these observations we have not attempted to deal with any other than the larger interests of Mr. Tyrer's life-work—we may call them national and international accomplishments. It is not yet time to write of the more intimate and personal matters. The record of these would, like a full account of his public service, fill a book, and he is not the sort of man to court publicity in these matters, for he is true to the injunction, "Let not the right hand know what the left hand doeth."

CAMPHOR-TREES IN ALGERIA.

For a long time efforts have been made to cultivate camphor-trees in Algeria, but strange to say no camphor was obtained from the varieties which were introduced there. It has therefore been decided somewhat prematurely that camphor-trees on the Mediterranean littoral produce no camphor. In 1893 camphor-seeds from Formosa were sent to Trabut, and the shoots which were obtained from these gave 1.05 to 1.40 per cent. of camphor in the green leaves and young branches of the shoots. Encouraging results have been obtained from the grafting of this new variety from Formosa on to the camphorless trees.

JAMAICAN PRODUCE.

The cultivation of annatto in Jamaica is almost entirely the occupation of the peasant class or small cultivators. In 1906 the export reached 457,248 lb., valued at 5,715*l.*, or nearly three times as much as the highest previous record. Pimento is a very fluctuating crop, and last year it was only a small one—91,725 cwt., as compared with 154,335 cwt. in 1905. Jamaica being practically the only source of supply, the value usually varies inversely with the size of the crop. Kola continues to exhibit a steady increase in the quantity exported—last year 63,811 lb. ; but the value—1,063*l.*—as compared with more profitable crops is not sufficient to attract serious attention. The exportation of ginger has continued to diminish every year for the last four years, probably owing to the absorbing attention paid to bananas. In the exportation of lime-juice, also, a similar decline during the last five years is apparent. In the past year the dry weather in St. Anns caused considerable failure in the crop, the decrease being 13,709 gals., valued at 738*l.* Honey increased by 835 cwt., or 501*l.*, but beeswax declined 43 cwt., or 424*l.*, and of divi-divi the exports increased by 1,833 cwt., or 575*l.*

PRESIDENTIAL ADDRESS TO THE BRITISH PHARMACEUTICAL CONFERENCE, JULY 23, 1907.

By THOMAS TYRER, F.I.C., F.C.S.

"We have heard the names of the departed—we deplore—we sympathise."

The presidential addresses enshrined in the "Year Book" of the British Pharmaceutical Conference from 1870 to 1906 constitute a body of deliberate opinion on many matters of importance and interest to the pharmacist. Some have been of a historical character, others ethical, still more pharmaceutical, and a few educational. One cannot pretend to such an acquaintance from personal knowledge with pharmacy or pharmaceutical matters as would justify any authoritative utterance on any of these subjects, yet there are some points to which reference is appropriate now.

Pharmacopœias.

It has been strongly advocated that the Medical Council should secure the co-operation of pharmacists in the compilation of the Pharmacopœia. Directly, and yet indirectly, this was gained through the editorship of Professor Attfield, a former secretary and President of the Conference. The competency of practising and scientific pharmacists to aid the Medical Council has been emphasised by many, and the "Year Book" should be useful to that end. Happily, the co-operation of pharmacists has been sought and utilised by the Medical Council of Great Britain and Ireland in the form of an Advisory Committee nominated by the Pharmaceutical Societies, and comprising some of the most eminent and able members of the British Pharmaceutical Conference.

You probably are aware that in the United States the Pharmacopœia is not the work of a Medical Council, but the legalised result of the co-operation of a large number of qualified medical men, professors, pharmacists, and manufacturers. The United States "Dispensatory," edited by honorary members of the B.P.C., is admittedly a standard work of reference which few can afford to dispense with.

The passage of the National Food and Drugs Act in the United States last year made its Pharmacopœia (eighth revision) the standard for official substances, and forced a compliance with its requirements, and, in consequence, many communications were received by the committee of revision of the U.S. requesting modifications in the official text. A list of additions and corrections was issued in May last. There are more than 200 pages paragraphed (see nineteenth edition of the U.S. Dispensatory) covering apparently some 600 corrections and emendations, most of them, so far as one's perusal has gone, justifiable and reasonable.

The constitution and composition (*personnel*) of the U.S. Pharmacopœia Committee is a model worthy serious consideration by the British authorities. That is, a committee thoroughly representative of all departments of practical pharmacy, galenical and non-galenical, including representative chemical manufacturers. It should be noted that the professorial element is particularly strong and competent in the United States.

An excellent commentary on the value of an Advisory Committee is recorded in the latest journals on "Juniper Oil." An example to be followed in cases of doubt, but obviously care must be exercised in the selection of the committee in each case.

"The Year-book of Pharmacy."

It is incumbent on those responsible that the B.P.C. "Year Book" should be maintained as a work of reference for the medical man, pharmacist, and manufacturer. It may be asserted that if the standard of its abstracts in chemistry, materia medica, botany and general pharmacy, to say nothing of what to one's mind is a greater necessity than ever—the *résumé* of scientific progress as the introduction, the bibliography and (notwithstanding recent useful collections) the notes and formulæ is not sustained, then the main reason for the existence of the Conference and its "Year-book" ceases, and the one solid argument for attracting members disappears. The preface to the 1870 "Year-book" contains matter so appropriate to the conditions of to-day that it should be perused in the light of present experience and need. One assumes from the note then appended that it was the joint work of J. Cargill Brough and Joseph Ince. The following words may be quoted:

> It has been the earnest wish of the British Pharmaceutical Conference to link together, with some degree of systematic arrangement, various ideas—French, German, American, and English—bearing on "our common mistress, Pharmacy."

If it is true that here, as in other countries, knowledge necessary to scientific pharmacy has extended almost beyond the ability or power of any single mind to grasp, much less follow, then no more powerful argument is needed for maintaining the "Year-book" at all costs at a high level. Local enthusiasm, especially in great centres, always brings an accession of members; some of these secede in a short time. A worthy cause has hitherto had a worthy and noble representation in the "Year-book," which has called forth enthusiasm in no small degree, and enlisted the labours and energies of many able minds, at a cost which is still as necessary as when the membership was larger and knowledge comparatively undiffused. Able, useful, and even notable as are abstracts relating to pharmacy and cognate subjects given in weekly trade journals, they are necessarily brief, selective and diffused amid the bulk of other matter; exceedingly useful, because topical, but too frequently cast aside after a hasty perusal, or—to put the point another way—not retained for reference, as would be the same special matter in the "Year-book." I advance a purely financial argument for securing through membership the "Year-book." The fact is that it pays to have the necessary information collected in one volume for handy reference. The highest value attaches to bibliography as a necessary corollary to abstracts; therefore, that useful element of earlier "Year-books" should be resuscitated and developed. Let it be well understood that I am not finding fault with publication of collections of recipes, formulæ, prescriptions, and practical hints as a business speculation, but for matters eminently cognate to scientific pharmacy and its needs there is the collective medium of our now historic "Year-book." This reference may be concluded by pointing out the utility of an introduction or reference to scientific work, which has hitherto been the work of the secretaries. When the volume of research in so many cognate branches of science is so great, it is necessary that an up-to-date summary should as far as possible be given. How suggestive are the latest records about serums, bacteriology, fermentation, colloidal states of matter, and even the latest theories in physical chemistry or chemical physics—which are not the same things. One is fully aware of the valuable *résumés* in all branches of science, theoretical and applied, which are presented at the annual meetings of many societies, and notably the annual report of scientific progress issued for the fourth year by the Chemical Society. Yet one pleads that for the pharmacist the "Year-book" on the lines of those published in the seventies is the most suitable organ for such a *résumé* of work and cognate science. Therefore, it is that hesitating members and reluctant recruits are doing harm to their own interests and exhibiting small recognition of the excellent and often self-denying labours of your officers.

If it be in any sense true that the differentiation between the trained pharmacist by examination and the admitted chemist and druggist by a Minor examination, apparent in earlier times, is still a fact, then the function of the B.P.C. and its "Year-book" is not diminished but exalted, and the responsibility of removing or reducing an epitome of knowledge and a mine of experience correspondingly increased. In this instance your presiding officer has not had the advantage of serving an apprenticeship on the Executive before assuming the Presidency; therefore his views must not be in any way confounded with theirs or of his predecessors. What really is the trivial subscription for a practical up-to-date reference book? So much for the "Year-book." May one suggest, as Umney did, that

> although the annual Conference gives opportunities for knowing, cultivating, and enjoying the friendship of one's *confrères*, the primary object of the B.P.C. is the dissemination of knowledge and interchange of experiences and opinions, which should ever be the end and aim, therefore continuous.

Research or investigation is impossible without knowledge, at any rate its scope is narrowed and progress impeded. As many recent remedies and therapeutic agents are synthetic and experimental, it is absolutely necessary to be guided by research. An intelligent perusal of modern patents is, to say the least, made difficult in the absence of adequate knowledge. Prodecessors in the office of President have often referred to the value of research, and deplored the fact that other nations have outstripped us in this essential condition of progress. May not the question again fairly be asked,

What is Research?

Professor Meldola, in his recent address to the Chemical Society, discusses the matter fully and fearlessly. He is of opinion that the submergence of the research talent is going on to a disastrous degree in this country. He differentiates strongly and clearly between the mere "tester" and the man who can conduct a research scientifically and work out problems. Umney, in his addresses in 1889 and 1890, indicated that

> the only way to meet the future of pharmacy as a "trade" was not only individually and collectively to maintain, but also to advance by research and every possible means all matters bearing on scientific pharmacy.

In 1889 he indicated that historic drug-houses, acting as manufacturers, had neglected research. Each establishment should have its chemist engaged in the examination of new remedies, etc., which "must tend to keep us out of the hands of foreigners." Is this less true to-day?

Professor Meldola names among the institutions doing good work and turning out good men the research laboratory of the Pharmaceutical Society, to the work from which reference is made later on. Other places are named from which research work has issued, some not primarily founded for that purpose, among them semi-private institutions such as the Lawes' Agricultural Station at Rothampsted, the Wellcome Chemical Research Laboratories, directed by Dr. F. B. Power, from which notable contributions to our knowledge of materia medica and pharmaceutical chemistry have been made. The physiological laboratories associated with the same enterprise contribute in their way research work as valuable to medicine and pharmacy as that of the Lister Institute or of the Schools of Tropical Medicine in London and Liverpool. From all these researches in pharmacology of profound interest and ultimate benefit to pharmacy do and must issue. Nor of the Imperial Institute, which is perhaps a more useful establishment as a research laboratory than as originally contemplated, but from which very valuable work useful in pharmacognosy, is frequently reported. Neither was named the Institute of Commercial Research in the Tropics, founded in 1906, and connected with the Liverpool University. [Here Mr. Tyrer substantially repeated what was said of this place in a recent issue of the *C. & D.*] Doubtless Professor Meldola hesitated to indicate many places in the kingdom where research is admittedly carried on; but in view of his general criticism one has ventured to name others having some related interest. There are several others which the Press may trouble to indicate in commenting upon the deficiencies of this discourse. The Guinness Research Laboratory, directed by Dr. Horace Brown, F.R.S., whose work on "Fermentation, Starches, and the Respiration of Plants" is classic, and whose opinion and work are quoted later.

If it be true that the retail pharmacist is less a practising pharmacist than he once was, then it has become emphatically needful that the manufacturing pharmacist should himself be scientifically trained and equipped and possess the spirit of research or employ those who have it. Not everyone who knows the "pass" quantity of chemistry, physics (*en passant*, there is too little of physics in the pharmaceutical curriculum), botany, or materia medica can become, or is, a competent "researcher." Knowledge of the principles of the sciences cognate to his investigation is essential. The gift of "imagination" in the Tyndalian sense is an enormous advantage. Happy he who possesses this gift already; but it can be cultivated and encouraged by the use of the faculties, observation, and deduction stimulated by studying current scientific literature. And in this particular the B.P.C can, and should, collate and index knowledge of attained facts.

What is research, then? It certainly is not guessing, although there are instances of so-called "luck" in that art. It is not a "shuffling" (to employ a metaphor) of mental impressions, or even scientific data, with some skill and expecting to turn up "trumps."

Researchers on "Research."

A few definitions of research given by some of the eminent wise and learned of the day in reply to one's inquiries may interest you. One whose name is intimately associated with our knowledge of a family of new gaseous elements described by Professor Chandler in New York as the "laziest" lot of elements ever heard of—argon, neon, krypton, xenon, and even helium—quotes Webster:

> A diligent and protracted seeking after the facts and theories of the science which deals with the elements of matter, the proportions in which they combine, the means of their separation, and the laws which govern and affect those agencies.

Sir William Ramsay has done his part in living up to this definition. Yet in a recent communication to the Society of Chemical Industry upon "The advantages of investigating the unlikely" he suggested that science and industry should attend to "trifles." Sir William wisely supposed that it is possible in real life to judge what are trifles and what are not. But in science it is not so easy. He elaborated the idea of "imagination" in a striking way. He said:

> We are a sporting race. There are two ways of working. You can either do what is already done—you can earn your daily bread, get in your money, save it, and do a day's work in a day, and so be content. Or, you can speculate. These two courses have their analogies in chemistry. You can either follow the regular routine and prepare organic compounds, each new one of which is so like the last that its properties and behaviour can be predicted. Occasionally an interesting compound turns up; interesting because it differs from what might have been expected. Though there are some giants, for example Professor Emil Fischer, of Berlin, the average man is content to do little bits of work of this nature, and is quite happy. On the other hand, it is possible to give a hostage to fortune as it were, to try something that is not very probable. Some people like to do ordinary routine work. Some, on the contrary, like to tempt Providence. I am one of those, said he, who prefer the latter course, and I venture to think that Providence has recompensed me to some extent.

Now this may be termed "guessing," but, if so, it is "scientific." You remember the now historic "guess" that the unabsorbed "bubble" in the Cavendish investigation might be an unknown constituent of the atmosphere. The results of research or investigation in the hands and brains of a Rayleigh or a Ramsay are incalculable. Take an instance of a different type. Professor Ramsay's work is of course, historic, and that on argon, helium, and allied gases, which attracted so much attention a few years ago, has been extended, more particularly with reference to the behaviour of these gases at low tempratures, and under diminished pressures from the spectrographic standpoint. Sir William, in connection with Soddy, has developed the radium question, and by the discovery that helium can arise from radium opened up the possibility of transmutation, which is now more seriously considered than at any date since mediæval times, the latest contribution being so recent as June 20.

Dr. T. E. Thorpe, not unknown to pharmacists, writes:

> The distinction drawn between investigation and research is rather subtle. . . . If I should be asked to name a man who combines in the highest degree the

> attributes of the successful technologist with the purely scientific instincts, the name that immediately occurs to one is Lord Kelvin, a man of very complex personality, with remarkable mental characteristics, which, deliberately thought over and analysed, furnish a definition of the ideal technologist. But then, Kelvin is a man in a million, and I suppose the ideal technologist is equally rare.

Lord Kelvin has been so good as to send me these few words signed by himself in his clear, bold hand :

> "Research" may be defined as endeavour to "extend our knowledge of the properties of matter."

Lord Kelvin lately claimed to be a "chemist," for he burnt his fingers with phosphorus when 82——, while Lord Rayleigh claimed kinship since he burned his with the same substance at twelve years of age.

Dr. Ludwig Mond, F.R.S., whose technical successes and benefactions to science at the Royal Institution, the Davy-Faraday Research Laboratory, and, not the least, the Schorlemmer and Schunck Laboratory of the Victoria University, may without doubt be regarded as a scientific technologist, made a speech on the opening of that laboratory. It is reported in full in the "Journal of the Society of Chemical Industry" for 1895. He observed in an eloquent passage :

> A new principle once acquired will soon be found applicable to the requirements of our daily life. Any advance in pure science is very soon followed by advances in our industries. To cite an example, we owe far more to Faraday's scientific work in electricity than to all the numberless inventors who have followed up his discoveries and put them to practical use.

To my mind, one of the most interesting, even fascinating, tales of the results of observation and scientific deduction is his account in the same journal and year of the history of the Mond nickel process, given in New York. Briefly, it amounted to this, that the vapour of ammonium chloride not only acts on oxides and salts, but also violently attacks the large majority of metals. Valves were required which had to be very tight to prevent a large loss of ammonia. It was found that nickel was suitable. In the laboratory nickel valves worked perfectly, on the manufacturing scale badly. They became encrusted with a black substance which proved to be carbon. This seemed mysterious, but in the laboratory the ammonia was swept out of the apparatus before admitting hot air, while on the large scale gases from a lime kiln, containing a few per cent. of carbon monoxide. This led to an investigation of the action of CO on nickel. A great deal of CO was decomposed by a small quantity of nickel. In experiments where CO was used the escaping CO was lit in order to keep this poisonous gas out of the atmosphere. At a point in cooling the flame became luminous and a spot like unto arsenic was deposited on porcelain. Observation led to experiment, and every indication being followed, the marvellous substance, a liquid, nickel carbonyl, became the factor in a unique and, after many vicissitudes, a flourishing industry. The brilliant technical achievements of Dr. Mond and his coadjutors are due to the relentless following up of clues or indications themselves the result of observation.

The Gospel of No Waste.

This spirit has no more forcible illustration than in the ultimate successes in the Solvay process for alkali production on the Continent and in Lancashire and Cheshire. The original and now familiar Hemming and Dyer patent, embodying the master idea or reaction, was a dead letter until the physical problems were solved, and these largely by the aid of the engineer—the chemical engineer. These problems involved mighty considerations of the conservation of heat energy, the fundamental principles of which were laid by Joule in the old Owens College, in this very city. How Dr. Mond has solved those problems may be recorded possibly in the Patent Office, but the testimony stands in gas processes which have cheapened the production of ammonia soda, as well as Leblanc.

By the utilisation of the sombre pit mound wastes of the Midlands there has been placed a gaseous fuel at the disposal of the electrical engineer which, notwithstanding the large percentage of inert gases, results in power as cheap as at Niagara; so that to-day in these very Midlands power is obtained for the electrical production of phosphorus by Messrs. Albright & Wilson, Ltd., as cheap as at Niagara. These two great technical advances emphasise the value of scientific observation. In the one case cheap, smokeless, or gaseous fuel was needed, the usual process of production involving waste of that proportion of nitrogen which is evolved as ammonia, which, again, is a necessity of the ammonia-soda process. Ammonium salts are volatile in an extraordinary degree, therefore the problem was to waste no nitrogen capable of forming ammonia, and to waste no ammonia. The crux of the ammonia-soda process lay in the solution of these two problems, and they have been solved by observation and deduction. It is worthy of note that "Mond" gas, containing so much inert gas, should, when employed as a motive-force, present peculiar problems. No finer illustration of scientific means to an end can be afforded than the paper of Mr. Richard Threlfall, F.R.S., recently printed in the "Journal of the Society of Chemical Industry," June 1907. He, a man of great scientific and mathematical ability and experience, finds his latest interest and gratification in surmounting the difficulties presented by the employment of this gas—an "old friend with a new face." I desire here to do justice to the older Leblanc process. Ruin stared it in the face. Weldon long ago showed that its salvation was its economical production of chlorine from surplus hydrochloric acid, yet he was, with strange irony, an adventurer in fields of technical research for the production of chlorine, which would have assisted in the downfall of the Leblanc process. Precisely the same use of scientific principles and knowledge have saved the situation and prolonged its existence, despite notorious yet possible unavoidable overcapitalisation. The recent notable and useful address at Birmingham, by Mr. Carey, retiring President of the Society of Chemical Industry, should be carefully read in this connection. The United Alkali Co.'s central laboratory at Widnes vies with many in equipment and staff. To pharmacists it will be gratifying to feel that among the many scientific workers attached to that colossal concern not the least conspicuous is one bearing the honoured name of Conroy. The son, Dr. James Conroy, bears proudly his father's name and ability.

Another great scientific technologist, the late Sir W. H. Perkin, F.R.S., the jubilee of whose greatest invention has recently been celebrated all over the civilised world, and whose death the whole of the scientific and technical world deplores, ascribed his successes to the possession of this power of observation. His life-work began with the search for synthetic or artificial quinine, then an "awful" price, and with the natural alkaloid of which the name of our members, the Howards, is indissolubly linked. Observing a coloration, Perkin followed up the indication, and ultimately "mauve" resulted, and in its train much which redounded to the credit and prestige of Britain. Sir W. H. Perkin himself modestly observed to me that he saw "no essential difference between research and investigation." Neither is there. In a speech during the Jubilee celebrations, Perkin said, referring to the older industries and the absence of old-fashioned prejudices to interfere with the new dye industry,

> The origin and foundation was the outcome of scientific research. Its development has been due to research, hence its unique character and marvellous growth—the fruit of the union of science and industry. . . . It was said that by my example I had done harm to science and diverted the minds of young men from pure to applied science. This soon righted itself, and this union of science and industry has had most beneficial results because they have been handmaids to one another in a most remarkable way, chemical science having made a progress it never could have made without the aid of this industry. The greatest chemists in the world have been occupied with the problems related to this industry, many of which are of the deepest and most abstruse nature, and now we also see in the colour works armies of highly trained men as well as eminent chemists incessantly at work, many occupied with research, whilst others are engaged in superintending and improving chemical operations in different departments.

Sir William was the first to apply Faraday's wonderful observation on the magnetic rotation of light to the determination of the chemical constitution of organic compounds; this work which Perkin started in 1888 he has persevered with vigorously ever since and with ever-increasing importance.

Professor W. H. Perkin, jun., F.R.S., of the Schorlemmer and Schunck Laboratory, writes :

> Chemical research may be likened to a traveller exploring an unknown country in a spirit of adventure. If he is a good observer he may discover gold and precious stones, but in any case he is sure to obtain results of value to mankind.

This opinion is singularly corroborative of his father's and Sir Wm. Ramsay's ideas. [Mr. Tyrer here declared that Dr. Perkins is the nearest approach we have in this country to those distinguished German chemists who have built up a school, and mentioned his most recent work.]

Professor Henderson, of the Andersonian, Glasgow, successor to Dittmar and an examiner at the Institute of Chemistry, is clear that

> Research is work in any branch of the science (inorganic, organic, or physical, analytical and technological) which results in the discovery of new facts, or in the formulation of laws based on discovered facts.

Thus no field of experimental work is held to be barren. Professor Henderson's recent work, "The action of chromyl chloride on various unsaturated hydrocarbons (including pinene)," is a notable piece of research.

Researchers Related to Pharmacy.

Professor Stanley Kipping, F.R.S., of Nottingham, defines "Research" as a "systematic investigation with the object of discovering chemical facts. But, he delightfully continues, "the chemist's greatest source of pleasure and the least profitable of all occupations from a pecuniary point of view, unless it is of the commercial variety." [The Professor's most notable work was mentioned.]

Professors of the School of Pharmacy, "The Square," have adumbrated definitions. Dr. Attfield, a worthy instructor (the cause of whose absence to-day we all deplore), says :

> Research is the bringing of truth from the region of the unknown into the region of the known.

That is wisely uttered, and are not his text-books his "monument"?

Professor Dunstan, F.R.S., regards the question as a large one and not quite easy to answer, but it is "observation and deduction with experiment on scientific lines." His earlier work on the nitrites and the alkaloids (contributed to by familiar men—Dymond, Woolley, Lloyd, Williams, Ince, Tutton, Umney, Passmore, and Hills), particularly those of the aconite group, has been continued, and more recently interesting cases of cyanogenesis in plants have been studied, *Phaseolus lunatus* and the root of bitter cassava having been shown to contain a glucoside which, under enzymic influence, liberates prussic acid. Important papers on the chemistry of rubber and of gums have also emanated from his laboratory.

Dr. Norman Collie, F.R.S., now Professor of Organic Chemistry in the University College, London, is no mean exponent of true research, as not only his recent work but his research at the "Square" on the production of pyridine derivatives, ethylic β amidocrotonate, with Frye on the action of bromine and benzine, and Garsed on cocaine.

His successor, Professor Wynne, F.R.S., now at Sheffield, refers one to the Oxford dictionary, and remarks that the definition given

> covers the meaning associated with the word in all humanistic and scientific studies, and therefore in chemistry "research" is an investigation into things directed to the discovery of some fact by careful consideration or study of a subject; whilst usually concerned with the discovery of new facts, the word also covers the correlation of facts already known.

The genial dean of the "School," Professor A. W. Crossley, F.R.S., whom we congratulate on his recent honour, takes the orthodox view, and has been concerned chiefly in the study of the important class of hydro-aromatic compounds, which derive their interest from the relation they bear to the hydrocarbons of the terpene series. His papers, in collaboration with Miss Renouf, notably on dihydro laurolene and dihydro isolaurolene, true hydrocarbons, derivable from certain camphor derivatives, is notable in connection with present technical research.

Professor W. A. Tilden, F.R.S., whose early association with the "Square" and with Professor Redwood will be remembered, has been making an extended study of the atomic heat of elements and an investigation of gases occluded in minerals; also many papers on organic subjects, chiefly connected with pinene. His name will always be associated with an "accidental" production of caoutchouc during his researches on the "terpenes," but which never repeated itself nor has been repeated so far as one knows.

Professor Greenish's contributions to scientific pharmacy indicate the character of the work carried on in the pharmaceutical laboratory, and are complete illustrations of the conditions insisted on for successful research.

Professor Green's retirement from the chair of botany leaves that science the poorer.

The work done in the "research" laboratory at the "Square" is creditable alike to professor and students.

The Hanbury medal, on the committee for the awarding of which your President for the time being has an honourable place, was lately awarded to a past student of the "Square" school, Mr. David Hooper, of Calcutta. May we not pleasurably note the recognition of our fundamental science by the bestowal of the Order of Merit on Sir J. D. Hooker, F.R.S.?

Opinions from Pure Chemistry.

The President of the Institute of Chemistry, Professor Percy Faraday Frankland, says :

> Diligent inquiry or examination in seeking facts or principles laborious or continued search after truth are definitions of "research," which I find in my dictionary. I do not think they can be much improved upon.

Professor Frankland gives an example :

> The analysis of a particular specimen of anything, the general composition of which was already known, I should not regard as research, although the analysis of a number of specimens with a view to determining the general relationship between composition and properties, origin, etc., would be of the nature of research.

Dr. Frankland's recent work on the relation of rotation and molecular volume, which throws great light on the molecular constitution of certain organic bodies, notably tatraamide and its derivatives.

Sir Wm. Crookes, F.R.S., the eminent scientist who assisted investigations in high vacua by the introduction of his "tube," has difficulty in finding a satisfactory definition of "Research." He believes that the qualities for a successful researcher are inborn, and observes that—

> On reading General Baden-Powell's book on scouting, I made an analogy with the successful scout in exploration and a successful researcher in science. What directs particular attention to a line of research is a mystery. A particular subject takes hold of one, and he instantly feels he has found his occupation.

Sir William delightfully remarks :

> What made me first take up the subject of the rare earths I cannot tell: I was working at them in 1849, and I have been pretty faithful to my first love ever since (except for a few flirtations with high vacua).

It is not inappropriate here to say that if there is one field more than another where investigation in the true spirit of research is necessary it is in that of the rare earths on a large scale.

The physical conditions under which chemical change takes place, and the demand for research in order to reproduce, apply and ultimately employ them, are well exemplified in the utilisation of atmospheric nitrogen, for fertilising materials, in anticipation of the shortage of Chilian saltpetre (nitrate of soda). Sir Wm. Crookes has in season and out of season declared that one day there must be a shortage of wheat, owing to exhaustion of soils and of space, and not less the exhaustion of the world's supply of fixed nitrogen. Every fireplace and furnace is contributing to this exhaustion, and one contemplates with satisfaction how, needing salts of ammonia, Mond and his co-workers utilised the fixed nitrogen in the fuels and obtained both the chemical equivalents of salts and heat units. Quoting Crookes :

> Every square yard of our earth's surface has about 7 tons of nitrogen pressing down on it. Free, this gaseous nitrogen is apparently worthless; combined as nitrate of soda it would be worth about 2,000*l*.

[Mr. Tyrer spoke of the work done in this subject since 1892 as indicative of the realisation of Crookes's prophecy.] It may be interesting to say here that in a short time "cyanamide" will be on this market in quantity from Sweden at a price rivalling the nitrate of soda equivalent of nitrogen. Sir William Crookes's work on radiology and his interest in the fixation of atmospheric nitrogen is well known, and a marvellous piece of scientific adventure it is.

Professor Armstrong, F.R.S., has always maintained in season and out of season the absolute necessity of research as "the" element of scientific and technical progress. Years ago he asserted to incredulous readers and hearers that all research ultimately leads to industrial results or ends in technology. He has, in taking Professor Meldola's address as his text, been writing in the "Times" (see supplements, May 8 and 15) on "British Neglect of Chemical Research." It was chiefly in answer to the question put to him, "What is research?" that the letters to the "Times" were written, and in them he said :

> Original research may be said to be the considered art of inquiry, organised inquiry, into the unknown. Modern progress is the outcome of such inquiry. Our present system, one of fact-worship and dogmatism, which involves the strangulation of capacity. Research work is the one means known to us of keeping teachers alive and training students to think for themselves, the one and only means of establishing a forward outlook.

There is very grave truth in the criticism that our universities make reseach work the subject of post-graduate study instead of regarding it as the necessary preliminary to the degree, as the Germans do, consequently very few engage in it, and these, as a rule, come to the work with minds cramped by academic studies, and more or less encrusted with prejudice.

Dr. Edward Divers, F.R.S., Emeritus Professor of Chemistry in the University of Tokio, who has after twenty-six arduous years in that progressive land returned only to engage in every good scientific or educational work, defines research as the *re*-search after truth in the partially known or the unknown. His communication is like much of his work, a criticism and a philological monogram. The ancients were, he considers, true and real searchers—notwithstanding their approximations and guesses. We moderns are in many cases only re-searching, and often in less truly inquiring spirit. Professor Divers has special claims to the admiration of pharmacists in that in 1871 he defined the composition of the ammonium carbonates—the work which obtained for him in 1891 the magic sign F.R.S.

Professor Pope, F.R.S., fully agrees with Professor Armstrong, and observes that

> It is customary to make a sharp distinction between research of an avowedly technical character and of a purely scientific nature. This seems to involve a gratuitous assumption concerning what one does not know, and which one hopes to find out; that one can tell beforehand whether it will or will not have technical applications. Further, that frequently a piece of technical investigation has no technical results; but has important scientific ones; and also that a piece of scientific research which looks beforehand as if it could have no technical application often revolutionises whole industries. As examples, those in the coal-tar-colour industry, the saccharin manufacture, the incandescent mantle, the electric-furnace industries, liquid air, and many other instances.

Professor Pope's acute scientific perception supplied the missing link in Van't Hoff's splendid generalisation, and established his position in Britain's scientific roll of honour. Van't Hoff showed that to account for the behaviour of carbon compounds one must assume that the molecule of such substances is situated in space, not simply on a plane, as would appear from Kekule's formula. Van't Hoff neglected, however, to develop the experimental methods for proving his case. Pope produced experimental results, and showed further that, to account for the behavious of all compounds, one must assume that the molecule is extended in space.

This Symposium of Definitions

may fitly be supplemented by the opinions of two men not unknown in Manchester. Dr. J. Lewkowitsch, whose work on "Oils, Fats, and Waxes, and their Relative—Soap" is a classic, believes that every man, be he shoemaker, manufacturer, or teacher of science, should practise research. The first requisite, he thinks, should be the "yearning for truth." But there must be the proper preparation for research. The manufacturer probably would confine his research to an investigation into the phenomenon underlying his processes, so as to discover better or cheaper methods. Perchance this might lead on to his becoming an investigator in the best sense of the term ; thus he would scarcely differ from those who are expected to be the researchers *par excellence*—viz., the professors of the schools where the raw material is trained to blossom duly into the "research" chemist. The Doctor sententiously observes, "These teachers should first show that they can carry out an investigation or a research."

Dr. Markel, the scientific chief of Messrs. Crosfield & Co.'s works, says the inquiry is a "big one." Truly it is. He says :

> Research in the most general sense is an inquiry, investigation, or experiment pursued with the object of adding in one of the branches of science to the sum of things known. The essential of research is that it should produce a totally new result. The term may properly be applied to inquiries or experiments having for their object the recovery of knowledge lost to mankind; it may also be applied to work undertaken in order to more completely establish results already obtained, but in the interests of precision and that dignity which ought to attach to the word "research," I would deprecate its indiscriminate use for work of a low order.

Mr. Tyrer referred also in terms of commendation to the work of Beilby and Young in regard to the treatment of oil shales and the utilisation of cyanogen ; to the identification of Mr. A. Gordon Salamon with the manufacture of saccharin in London ; and quoted the opinion of Mr. W. F. Reid, a "Hofmannite," and the inventor of smokeless gunpowder, who says in regard to research :

> Perseverance is an essential element of success, and if the researcher realises that nine-tenths of his experiments will probably be failures, and he goes on, he bids fair to win.

Mr. R. J. Friswell also remarks that research has two great divisions in practice :

> 1. Pure research, where the facts or laws ascertained are sole objects of the work.
>
> 2. Applied research, where the object is to ascertain particularly facts or laws having a bearing of a commercial value on same industry.

The second is more restricted than the first, as from the nature of the case it is confined to certain definite lines, and no deviation or divagation is permissible.

Dublin and Manchester.

There is an excellent reason in the fact that you have a paper in the proceedings on "Plant Diseases" for noticing the marvellous research work of Dr. Horace Brown, F.R.S., whose work on the scientific aspects of the brewing industry and cognate thereto rival those of an old and lamented friend, O'Sullivan, director of the research laboratory at Messrs. Bass's at Burton. The starting point of all these researches—in the brewery and in the Guinness's Research Laboratory—originated in an attempt to explain a simple technical point in brewing. The particular research will be found in the "Chemical Society's Journal" for May 1893. The addition in some localities of a small quantity of dry hops to the finished beer had produced a strongly marked effect, which had been noted for generations but never explained. Drs. Brown and Morris investigated these phenomena, and there resulted a mass of research work of the most minute character, but by no means distantly allied to the botanical, chemical, and physiological aspects of practical pharmacognosy. One notes with pleasure that associated with the talented scientist was Mr. F. Escombe, F.L.S., a well-known botanist. The transactions of the Guinness's Laboratory are most illuminating and valuable. Dr. Brown's well-known work on starch transformation is being continued, and an acceptable theory put forward to explain the occurrence of maltose and the malto-dextrine among the products of starch degradation. More recently the author has carried out important experiments on the diffusion of gases, with special reference to the mechanism of plant respiration ; these have involved the elaboration of a new method of determining the rate of assimilation of carbon dioxide by leaves, and the ultimate outcome of the work, which is being continued, will probably be most important, not least to the scientific pharmacist.

Sir H. E. Roscoe, whose name and labours are so honourably associated with your university, in a reference in his delightful "Experiences" to the "Dalton" Scholarship and the men who gained it, observes that the stimulus to original work must be given by the teacher, and it is he only whose head, hand, and heart are thus occupied who can induce others to follow the same difficult, though delightful, path. The spirit of research must be felt in the atmosphere of the laboratory, and in this respect there ought to be no difference between pure science and its applications. To prosecute one or the other the methods of research must be learned and followed. This influence of the teacher reminds one that like Hofmann, Roscoe's influence with students was very great and intimate, and the men who lent lustre to their *alma mater,* Owens, are to-day loudest in their appreciation of this essential requisite of the true teacher. The same quality characterises the influence of Ramsay. It is fitting here that we should congratulate the Victoria University and Manchester upon the accession of Professor Rutherford, of radium emanation fame, to the chair vacated by Professor Schuster—another exponent of true research.

As one recalls recent triumphs of scientific technology—the direct results of research—one is almost alarmed. The alarm arises from the sense of one's impotence in face of the vast field of fertile research—accomplished and to be accomplished. Take alone the fuel question to the philosophy of which Armstrong and Dixon contributed so much. The memorable discovery by the latter of the incombustibility of carbon monoxide in the absence of water in 1884 opened a new era. Then came H. B. Baker's startling observation on the influence of moisture on the occurrence of chemical change, demonstrated in 1903 by the incombustibility of hydrogen even when wet, in the absence of impurity calculated to render water an electrolytic conductor. Dixon's contributions to physical chemistry take high rank among the best work of our time. Ah, but it is all observation, deduction and experimental proof "research."

Some Applications.

The manufacture of soap was, as Lewkowitsch observes, too long looked upon as a mere art, although its operations are governed by the laws of mass action, the phase rule, and the modern chemistry of colloids. Now, ask yourselves how many technologists and pharmacists—at any rate, manufacturing pharmacists are technologists—have studied these factors in scale operations? Is not our frequent trouble that things "go" in the laboratory and do not go in the factory? Mass action is intelligible as a factor without much intellectual exertion, but the "phase" rule, what is it? Some text-book definitions make it a little mysterious. Professor Pope puts it thus:

> The phase rule is merely a convenient method of stating the results of observation. Apart from the ease with which it enables us to classify experimental results on the equilibrium between solutions and solids it is useless.

That is to say, one cannot derive any new information from the consideration of the phase rule alone. It has been applied with results of technological importance only to the question of the separation of the numerous salts which occur in the Stassfurt salt-deposits; this application was made by Van't Hoff, and has greatly facilitated the separation of pure products from those deposits. A little consideration will give the reason, and point to a knowledge of solubilities and the interaction of salts of differing solubilities. This application appeared the only technological one till the other day Lewkowitsch, in a symposium on "Soap," held in New York, reminded his hearers of the part Chevreul played in the science of soap-making, and how even his profound generalisation on hydrolysis was disregarded and even forgotten.

It seems abundantly clear that adequate and scientific control of technical operations—and that is the only control worth having in these competitive times—can be secured by understanding the conditions under which the best results—or, for the matter of that, inferior ones—are obtained. Every now and then things go wrong under most experienced hands. Why? Probably because the operator or supervisor knows too little—or not enough. He may have been unobservant during former procedure, and some point of temperature, motion, rate of mixture, dilution, or some small yet unimportant factor been overlooked. Only observation and deduction can cope successfully with this often irritating and always uneconomical condition. Broadly, one may put it that no business is too small to be conducted on something like regular principles. Certainly no large business can in these days be conducted otherwise, and it may be doubted whether the vaunted superiority of our national rivals arises from individual superiority of brain, muscle, or power of adaptation, but to an inculcated discipline, first of the body, then of the mind, based on training from the earliest days by a simple but thorough instilling of elementary knowledge, superadded to by a secondary training in the principles underlying the chief departments of knowledge, and supplemented by the need of reaching a high level of attainment, to shorten military service, to secure professional advancement and social class distinction, which is a powerful incentive to the ambitious. One may honestly believe that compulsory military service would alone alter the whole disciplinary state of mind of this land of ours, particularly if with it that discordant element of creeds rather than morals could be treated on the lines of common sense and national good. But the practice is almost criminal of cutting a young man straight off scientific work at eighteen to twenty-one years old. Then, while the majority think they "know," is the time for building on the foundations laid. Five years is not too much, certainly three or four with post-graduate work. Then we should reap good harvest. With this, however, scientific knowledge would be eminently necessary, and that knowledge is one of principles, fundamental truths. For a few moments let us survey those necessary for modern success in applied research. Rule of thumb is done for. The simplest expression of scientific principle for an ordinary chemical technologist is Dalton's "Laws of Chemical Combination and Atomic Theory." It should be emphasised in these days, when the constitution of matter is yet controversial, that Dalton, the pride of Manchester, never claimed that he had propounded a theory of matter; he founded a "chemical" atomic theory as distinguished from the "dynamic," "in which there is no limit placed on the divisibility of matter, and, therefore, no finite particles exist, and all we observe is explained by attractions or repulsions." This great man was a true researcher. A "sidelight" on John Dalton, lecturer on pharmaceutical chemistry, by your Local Secretary, Mr. Kirkby, will be found in the "Pharmaceutical Journal" of February 27, 1904, and should be read by every pharmacist.

How? Why? Wherefore?

were constant inquiries of Nature, and he was not contented until his queries were answered satisfactorily. Investigation has proceeded. Newer observations have placed old facts and explanations in different positions, and to-day some of the newer technologists are concerned at the lack of knowledge and want of appreciation of the "very latest" regarding "particles," "atoms," "molecules," "ions," "electrons," among the older sort. It matters little if "truth" is ascertained and sound bases for technical work established. It must not go unsaid that no one can successfully conduct research, scientific or technical, without fair acquaintance with the current theories in chemistry and necessarily allied subjects. The investigator never knows at what point light may be necessary; indeed, his more earnest cry is for "Light, more light!" Arrhenius, the eminent director of the Nobel Institute at Stockholm, asks the question, "What is the characteristic feature of a theory?" Some would reply, "A theory is something impractical." Nothing could be more incorrect. It is just the contrary. A "theory should account for all the known facts at the time." The ancients perused their experiments quite as much in the hope of establishing causes as for the special object in view, and many of them were the pharmacists of that day, and as such we owe them thanks.

The volume of experimental demonstration and indispensable deduction therefrom has increased, and will increase from month to month, therefore the necessity for that educational grinding in principles without which we are groping in the dark and not searching in the light. One may remark that a knowledge of mathematics is absolutely necessary to any adequate comprehension of the foundations of technical progress on scientific lines, that is, clear thinking in the mathematical way, with precision. How else can any differentiation of the laws and theories of Lavoisier, Mendeléeff, Provost, Priestley, Devoy, Faraday, Boyle, Gay Lussac, Avogadro, Maxwell, Ampère, Berzelius, Helmholtz, Van't Hoff, Le Bel, J. J. Thomson, Rutherford, Berthelot, not to mention many others in all lands, and Emil Fischer, whose study of the polysaccharides, the isolation of which led to the famous generalisation that an enzyme must possess a similar configuration to the polysaccharide which it is capable of hydrolising. Fischer graphically pictured this relation as analogous to the key and lock. As the result of this work the fact was demonstrated that alcoholic fermentation by yeast of any of the more-complex sugars, such as maltose, is preceded by hydrolysis into the simpler sugars. The elucidation of the chemistry of malt-extracts followed, and consequent establishment of a definite constitution. The British investigators—A. R. Ling and Julian L. Baker—with Bernard Davis, Rendle, and others, have established the production of dextrose by diastatic action. Dextrose is shown to be an invariable constituent of commercial malt-extracts, due to the fact that in their preparation there are two phases :

1. The starch is converted in the mash tun, after which the temperature is lowered and the reaction stopped.
2. The wort is pumped into the vacuum pan, where during evaporation diastatic action recommences, dextrose as well as maltose being produced.

Prior to this work, if dextrose had been discovered in malt extracts it would have been regarded as an adulteration. One is led to this elaboration because malt extract is increasingly a product of the pharmaceutical laboratory and about the standard, for which even now considerable misapprehension exists. But to conclude references to investigators, one must mention the epoch-making synthesis of albuminoids of Emil Fischer, following that in the sugar group in 1890-91-93-95, in which F. W. Passmore collaborated, and that of caffeine in 1896. Whether synthetic foods will come, and be of use when they do, is in the future. One can but admire such work, and envy the possessor his faculties. There is but one Fischer.

[Brief reference was here made to synthetic remedies and synthetic camphor.]

Back to Pharmacy.

The production of synthetic camphor ($C_{10}H_{16}O$) has much interest to-day among researchers. Like caoutchouc, it was foreshadowed long ago. The subject is too large to treat here, but let it be remembered that camphene is not camphor, as the structural formula shows.

One must beware of narrowing the definition of the term or word chemist. The prefixing adjective industrial, academic or professional, merely differentiates. The chemist one thinks of at the moment is the industrial variety, which, of course, includes the pharmaceutical. The pharmaceutical often and naturally develops into the manufacturing chemist, and they were never so numerous as to-day. It is but fair to scan the present position of the pharmaceutical chemist. Reference to the B.P.C. collective index will reveal names with which British scientific pharmacy may well be gratified, not to mention the names of those who have occupied the chair, and whose names are recorded in every Year Book. Pharmacy is a science and profession. Pharmacy will never proceed unless the value of research is increasingly felt, hence this attempt to magnify its importance.

One desires to emphasise a point of great importance in view of the very decided criticisms made that there is a considerable amount of research talent "submerged," but it is submerged for the most part because for the time present it is not at disposal. It is private and yet joint property; private to the researcher, joint with the employer. Where the researcher is free and independent he does not proclaim his doings from the house top, at least, not those which are the equivalents of his daily bread. Then as to the employers, is it reasonable to suppose that they are insensible to the value of research and have no exponent of it at hand? Can one conceive of any manufacturing or pharmaceutical chemist of eminence disregarding the necessity as a necessity of research as an element of progress, and especially so in the manufacturing and wholesale houses directly and indirectly connected with pharmacy and technological chemistry? Articles appearing in the journals are proof that the research talent not only exists but is active. If either class are unconcerned or unprepared, then the long-looked-for and impending changes in patent-law, railway rates adjustment, canalisation, and readjustment of customs duties with further adjustments as to industrial alcohol, not to mention the speedy and inevitable alteration of our defective educational system, will be of little use against the batteries of intellect, industry, and science in other lands.

The last occupant of the chair in this noble city of Manchester was our venerable friend, Mr. S. R. Atkins. Our very sincerest wishes follow him into a retirement from public life, which he has adorned and honoured. His address was a sketch of scientific pharmacy in the Victorian era, and was a model of brevity and beauty, which this certainly is not, and he will best be remembered to-day by quoting the peroration of that address in 1887 :

> I cherish the confident belief that the Manchester meeting of the British Pharmaceutical Conference will not merely promote generous sentiments, but specially that the papers which will be read and the discussions which follow will inspire us with noble aims and fresh endeavours.
>
> "Who are the great?
> Those who have boldly ventured to explore
> Unbounded seas, and lands unknown before—
> Soared on the wings of science, wide and far,
> Measured the sun, and weighed each distant star,
> Pierced the dark depths of ocean and of earth,
> And brought uncounted wonders into birth;
> Repelled the pestilence, restrained the storm,
> And given new beauty to the human form;
> Wakened the voice of reason, and unfurled
> The page of truthful knowledge to the world.
> They who have toiled and studied for mankind,
> Aroused the slumbering virtues of the mind—
> Taught us a thousand blessings to create—
> These are the nobly great!"

A MINOR MAN'S SOLILOQUY.

I wish I might have had the luck
To live some million years ago;
Ere man emerging from the ruck
Contrived so many things to know—
Ere dreams of the "Minor" marred his rest
And Chemistry his mind oppressed.
O! for that time in the distant past,
Ere man had become a protoplast.
Let us follow back Creation's scale
To the time when man first wore a tail,
And ask ourselves in honest truth,
Should we not prefer it to this age of Newth?
Sometimes when I feel in reflective mood,
My fancy feeds on such ancient food
As primitive man, and his mode of life,
And his work and his woe, and his weary strife,
And I sadly reflect on what he has done
In transmitting the curse of Galen's son.
The learned Linnæus drew into line
All plants from the Protococcus to the Pine.
That his task was gigantic we all agree;
But why a big name for a very small tree?
I'm sure his memory would dearer be
If he would only a little clearer be.
But the aims of all are high, you'll agree,
If you seek to become a C. and D.
And then, ye knights of galenical art,
You'll reflect with joy on sod. pot. tart.;
And you'll wonder that ever in your ingrate breast
You could have rebelled 'gainst the "Minor" test.
But I've an aspiration of another kind;
To get away from Newth and all of his kind.
Then, kindly Fortune, hear my prayer!
Translate me forthwith thro' the air
Far back to those days of long ago,
Before the time of Avogadro.

R. A. R. (159/47.)

The Exports of star-aniseed oil from Wuchow during 1906 amounted to 2,431 cwt., and of cassia oil 126 cwt. was exported. Star-aniseed exports increased from 7,060 cwt. in 1905 to 8,374 cwt. in 1906.

PHARMACY NOTES FROM VARIOUS PARTS OF THE WORLD.

By W. HARRISON MARTINDALE, Ph.D., Pharmaceutical Chemist.

The author communicated to the British Pharmaceutical Conference at the meeting in Manchester this week a lengthy paper under the above title, embodying selections from correspondence which he has had during the past year with pharmacists in all parts of the world. The communication extended to about thirty pages of The Chemist and Druggist, and by arrangement between us the whole was presented in pamphlet form to those attending the Conference. Under the same arrangement we now print selections from it which we believe will be of general interest. The selections do not include the whole of the countries from which Dr. Martindale has collected his information, as may be gathered by reference to our report of the Conference proceedings.

CANADA.

The matter gleaned from Canada, for which I am indebted to Mr. Lloyd Wood, of Toronto, is naturally very similar to that obtainable in Great Britain. I have, therefore, condensed it to the utmost.

Articles Prescribed by Physicians.

Adrin Compound Suppositories.—For hæmorrhoids.

Blandine Compound.—A hydrocarbon oil with camphor, thymol, and eucalyptus; for oil spray.

Cellulin.—A ferment, active upon sugar, starch, and fats, in alkaline medium; dispensed in 7-grain tablets.

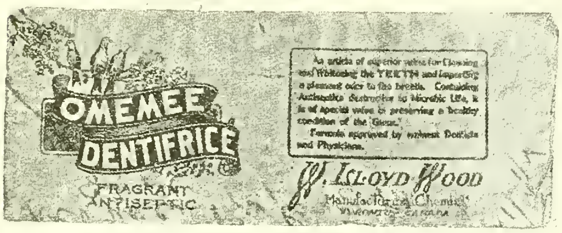
Olive Oil.—Extremely popular at the moment; used largely in place of cod-liver oil.

Pre-digested Beef.—An American product of beef peptones; dose, one to two tablespoonfuls; a stimulant and nutritive.

Sodium Iodide.—With pepsin in the form of elixir; alterative.

Somnos.—Hypnotic, a solution of triclorethidine propenyl-ether; dose, 1 to 4 teaspoonfuls; given as a sedative, and for insomnia.

Sparteine Sulphate.—In $\frac{1}{4}$ to $\frac{1}{2}$ grain doses, with digitalis; in cardiac affections.



Original $5\frac{3}{4}$ in. by $2\frac{1}{4}$ in. Dark violet ink. For tooth-powder tin.

This unique label is printed on crinkled tinfoil.

DEMERARA.

No doctors dispense in Demerara. The people, it appears, are great physic-takers, prices are good, and the Colony is a perfect paradise from the chemist's point of view. There is plenty of work, and anybody going with the idea of having an easy time will soon be disillusioned. The experience gained is excellent; the population exceedingly varied—East Indian, Portuguese, Chinese, the aboriginal Indians, blacks (of African descent), Creoles, and the "home fellows," who are in the minority—the shades of colour ranging from coal-black to purest white, the Britishers.

For a typical prescription the following may be selected:

Quin. sulph.	gr. v.
Phenacetin.	gr. v.
Ac. arsenios.	gr. $\frac{1}{50}$
Ext. nucis vom.	gr. $\frac{1}{4}$

Ft. pulv. in cachet. Mitte xij.

Sig.: One every four hours till the fever breaks.

Mr. Ault, of Messrs. J. D. Alty & Co., Demerara, who gave me a considerable amount of assistance, classes the above as an excellent fever remedy.

Preparations of local interest are:

Decoction of Woods.—The "woods," very similar to the ingredients in dec sarsæ co., are supplied in packets to be treated with hot water.

Brathwaite's Mixture is in great demand, containing pot. iod., liq. morph., liq. opii sed., dec. sarsæ, tinct. hyoscyam.

Tamarind Cough Emulsion.—Contains no tamarind.

Purely local items puzzling to the uninitiated are:

Maran.—Bals. copaibæ.

Baby Oil.—Ol. ricini.

Brandy Jalep.—Tinct. jalapæ.

Mauby Bark.—This is the bark of a small tree, *Colubrina reclinata* (Rhamnaceæ) (Mabee Bark, N.S.D.), indigenous to several parts of the West Indies. Before the Mont Pelée disaster, Martinique was the chief locality for it. Stomachic.

Crab Oil (*Carapa guiniensis*).—The oil from the fruit of this plant is strongly objected to by insects. It is held in very high esteem by the blacks in Demerara; internally as purgative, also externally. The sample exhibited will be seen to be thick, whereas in Demerara it is, of course, perfectly fluid. The coolies hawk coconut oil from door to door, which tends to spoil the chemists' sale of this article.

DENMARK.

In addition to the Danish Pharmacopœia, of which, by the way, a new edition is just issued, two small books of formulas are consulted by the medical man and the pharmacist—one of them, for dispensing-purposes, is entitled "Pharmacopoea Nosocomii Civitatis Havniensis" (seventh edition), compiled by authority by A. Fløystrup and C. Nebelong; and the other, the "List of Compositioner," a supplement to the "Haandkjobs-Taxt" (tariff for sale over the counter). The Pharm. Nosocomii (the Hospitals Pharmacopœia) C.H. is a private undertaking. M. Fløystrup, a prominent physician, and M. Nebelong (the latter is deceased) have authority of the "Laegeraad"—*i.e.*, the chief physicians in the different hospitals. The contents of the little book are medicaments for internal, subcutaneous or cutaneous, and external use, baths, and finally reagents in the order indicated.

From the Pharm. Nosocomii I give an abstract (all parts by weight). The formulæ are, however, for brevity condensed together alphabetically, and not subdivided into the groups mentioned.

Linctus Expectorans.—Sulfidi stibici (antim. sulphurat.) 2, syr. sacchari 450, aq. amygd. amara 50; dose, one teaspoonful. This preparation has, of course, to be shaken before administering.

Liniments.—*Lin. ad Ambustiones* is Carron oil made with ol. lini and lime-water p. æq. *Lin. Boeckii* (a surgeon): Talc, starch aa. 50, aq. saturnina (aq. saturnina = liq. plumhi subacetatis dil. 100. The formula employed in Denmark for lotio plumbi is lead acetate 20, water 900, alcohol dil. 80), glyc. 20. Fortyndes med lige Dele varmt Vand (dilute with equal quantity of warm water). *Lin. Hebræ Modificat.*: Sulph. sub., pyrolei pini aa. 10, sapo virid., creta alb. pulv. aa. 25, spirit. conc. 150. *Lin. Resolvens*: Ung. hydrarg., linim. ammoniaci camphorat. aa. p. æq.

Liq. Antirheumaticus Comp.—Vin. colch., spt. æther. camph., sol. ammoniaci spt., tr. lavand. rub. aa. p. æq. Dose, 40 drops.

Mel. Terebinth.—Mel. 45, ætherolei terebinth. 5. Dose, one teaspoonful.

Mixturæ.—*Mixt. Acid. Secalina*: Ext. ergot. 1, mixt. ac. sulph. 100. *Mixt. Boraxata*: Tartar boraxat. 2, aq. petroselin. 17, spt. æth. chlor. 1; dose, one teaspoonful. *Mixt. Chlorali Formamidati*: Chloralamid. 1, alcohol 2, syr. aurant. 3, aq. 9; dose, $1\frac{1}{2}$ to 2 teaspoonfuls. *Mixt. Flav.*: Spirit. conc. 40, aq. 160, sol. caramel 1; dose, one teaspoonful (distinguish from lotio flava B.P.!). *Mixt. Mucilaginosa*: Mucilag., aq. menth. pip. p. æq.; dose, one teaspoonful. *Mixt. Mucilaginosa Opiata*: Of the above 200 with vin. thebaiac. crocat. 3. *Mixt. Saleb. Oleosa*: Mixt. saleb. 30, ol. ricini 5; dose, one teaspoonful (til born = for children). *Mixt. Saturnina Mucilag.*: Lead acet. 1, aq. 400, mucil. 100 (for internal administration); dose, one teaspoonful (emmenagogue).

Pills.—*Pil. Chinicæ*: Quin. sulph. 0.1 gram. *Pil. Coffeinæ*: Caffeina 0.05 gram, quin. sulph. 0.01 gram, morph. HCl 0.005 gram. *Pil. Ferreæ c. Tannino*: Fe. lact., tann. aa. 0.05, carrageen 0.015 gram, mel. dep. q.s. (I understand the carrageen idea has dropped out of use). *Pil. Heimii Antihecticæ*: Quin. sulph. 0.05, digital. fol. 0.025, opii

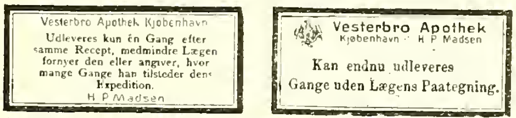
0.0125. *Pil. Mercuriales*: Hyd. perchlor., opii aa. 0.004 gram c. carrageen.

Syrups.—*Syr. Arsen. Ferros.*: Sol. arsen. natr. 5,000, ferri sulph. 10, acid. cit. 5, aq. 1,000, syr. 44,000; dose, one teaspoonful (10 grams=1 mgr. ferri arsen.). *Syr. Chloralico-morphicus*: Chloral. hyd. 500, morph. HCl. 5, syr. tolu 4,500; dose, one teaspoonful. *Syr. Iodet. Ferrosi Mitigat.*: Syr. iodet. ferrosi, syr. sacchari, syr. aurant. aa. p. æq.; dose, one teaspoonful. *Syr. Kermetis Mineral*: Kermes mineral 10, syr. 2 500.

Tinct. Rusci.—Ol. rusci 20, spt. conc., ether. aa. 30, ol. lavand., ol. rosmarini, ol. rutæ aa. 1. For external use.

Labels.

From a large number of specimens sent by Mr. Madsen I select examples which illustrate styles in form or printing, or which help to show how numerous are the stock labels used in dispensing and some good points in pharmaceutical practice:



Vesterbro Apothek Kjobenhavn
Udleveres kun én Gang efter samme Recept, medmindre Lægen fornyer den eller angiver, hvor mange Gange han tilsteder dens Expedition.
H P Madsen

Vesterbro Apothek
Kjøbenhavn · H P Madsen
Kan endnu udleveres
Gange uden Lægens Paategning.

Originals, 1⅞ in. by ⅞ in. Lines in gold. Lettering black.

(*Translation.*)
Can only be supplied once unless the physician renews the medicine, or indicates how often the pharmacist may repeat the prescription.

(*Translation.*)
This medicine may be supplied further times without the necessity of a fresh prescription.

The German method of dispensing powders is followed—that is to say, the powder-papers are supplied ready-folded, and in the case of simple powders the name of the article is printed on the plain side thus:

Vesterbro Apothek,
Kjobenhavn.

Acid. acetyl.salicyl.
50 Centigram.

H. P. Madsen.

The powder-papers are 3½ in. by 3 in., and are folded longways in two folds each of ⅛ in. When powders are put into these the papers are folded at one end, and the dispenser

> Weighs or divides (generally the latter) the required quantities of powder, putting each portion upon a horn scoop, next takes the number of folded papers required between the thumb and fingers of the left hand, and one after the other opens them, placing the contents of the scoop into each, and dexterously cross-folds each paper with the forefinger and second finger of the right hand.—*The Art of Dispensing.*

EGYPT (Cairo).

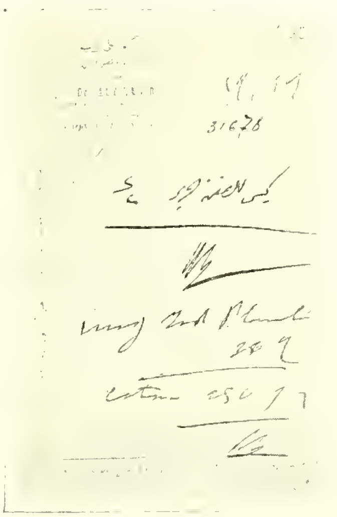
The prescriptions dispensed at Cairo are pretty equally divided among the English, French, Italian, German, Armenian, Greek, Arabic (sometimes in Arabic writing), Syrian, etc. The Oriental doctors mostly follow the French Codex or British Pharmacopœia, according to the school at which they have studied, and the Europeans naturally follow their own. Two prescriptions in Arabic are reproduced.

Mr. George H. Stephenson, pharmaceutical chemist, of Cairo, to whom I am much indebted, has sent me a list of drugs and proprietary articles taken from his prescription-books and counter—all of them in constant and almost daily use. I wish that space permitted me to print this cosmopolitan collection, but I must content myself with abstracting those preparations which I think will be unfamiliar to the English pharmacist. A large number of proprietary eye-powders are "put up" in Cairo, mostly composed of zinc oxide; the demand for boric acid powder and solution is considerable, as are also many other eye-remedies. Second in demand are tonic-wines (French preparations). Eye-troubles are rampant and due to bacterial infection, or worse! The lower classes of Egyptians go about covered with flies, especially all round their eyes. No attempt is made even by the children to drive them away.

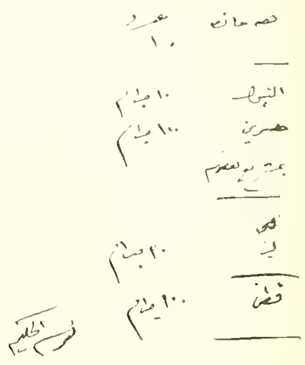
My courteous correspondent sends a valuable prescription for dysentery, which should be worth bearing in mind. A young Greek medico cured him in twenty-four hours of dysentery, after suffering more or less for about six months and trying a variety of remedies. It has been employed with equal success by many other sufferers. The prescription reads:

Simaruba-bark,
Pomegranate-fruit rind,
Gum arabic ... ... of each ½ oz.

Add the above ingredients to a litre of water and boil down to half a litre. Dose, 1 oz. three or four times a day.



Egyptian Prescription.



Arabic Prescription.

To drive away mosquitoes, which are exceedingly troublesome at Cairo, and to allay the irritation of their bites, carbolic acid with oil of citronella acts admirably. A compound on these lines, in addition to possessing much local popularity, has been sent to the Soudan and the Congo, with good reports as to its efficacy.

GERMANY.

Some German Medicines.

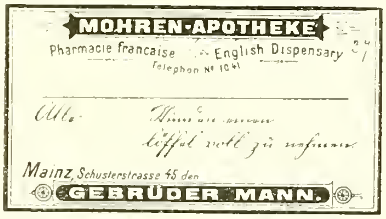
The following are some of the general requirements in a German pharmacy, somewhat unusual from the English pharmacist's point of view (with synonyms and common names):

Acet. Pyrolignos. Crud.—Rohe Holzessig.—As enema 1 in 30.
Calc. Phosph.—Knochenmehl. In rachitis.
Carragen Tinct.—Islaendisches Moos; infusion with boiling water for cough.
Cortex Frangulæ.—Faulbaumrinde. Laxative (infusion).
Cortex Granati.—Granatrinde. Vermifuge (decoction).
Cortex Quercus.—Eichenrinde. In diarrhœa as infusion.
Elixir c. Succ. Liquirit (Liq. Ammon. and Succ. Glycyrrh.). Daenische Tropfen for cough.
Emplastrum Anisat.—Anispflaster. For carbuncles.
Flores Cinæ.—Wurmsamen. Vermifuge.
Flores Sambuci.—Hollunder.
Flores Tiliæ.—Lindenblüthen. Household remedies.
Folia Trifolii Fibrin.—Bitterklee. Tonic.
Flores Verbasci.—Wollblumen. For cough.
Fructus Juniperi.—Wacholderbeeren. Laxative.
Herba Absynthii.—Wermut. Tonic.
Herba Meliloti.—Steinklee. Tonic.
Herba Serpylli.—Quendel (wild thyme). Tonic.
Herba Violæ Tricolor.—Stiefmütterchen. Blood-purifying.
Linimentum Ammoniat.—Flüchtige Salbe. Embrocation.
Ol. Chloroformii 1 in 2. Chloroform-Oel. Rheumatism and gout.
Pulvis Ærophorus.—Brausepulver. Sodii bic., acid. tart., and sugar.
Sebum Salicylat.—Salicyl-talg. For perspiration of feet.
Species Pectoralis.—Brust-thee. For cough.
Spt. Chloroformii 1 in 2. Chloroform-Spiritus; rheumatism and gout.
Spiritus Formicarum.—Ameisen-spiritus. As embrocation.
Ung. Cerussæ.—Bleiweiss Salbe. For chilblains.

Suppositories.—A recent improvement in the suppository treatment of piles is the pessar-suppository. This combines the physical supporting and enlarging property of the hard pessary (*minus* its defects) with the lubricating power of the suppository. It consists of a bullet-shaped central cone 4 cm. long and 1.5 cm. thick, made of animal-fat tissue and an external layer of cacao-butter and hard paraffin. On placing the pessar-suppository *in situ* the central fat tissue becomes elastic in a short time, and thus provides the necessary alleviation of the pain and discomfort without the use of narcotic or anæsthetic drug.

German Labels.

German labels do not strike one as extraordinary. This is a fair example of the dispensing-labels :

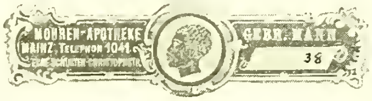


MOHREN-APOTHEKE
Pharmacie francaise — English Dispensary
Telephon No 1041

Alle [illegible] Stunden einen Löffel voll zu nehmen

Mainz, Schusterstrasse 45 den
GEBRÜDER MANN.

The original is 3 in. by 1½ in., and the ink is dark blue. Directions are varied. Slip-labels of scarlet paper and black cut-out letters (similar to our own "Poison") are used. I have examples : "Augenwasser" (*eye-lotion*) and "Gurgelwasser" (*gargle*). A label which is quite artistic in the original is :



MOHREN-APOTHEKE
MAINZ, TELEPHON 1041.
[illegible]
GEBR. MANN
38

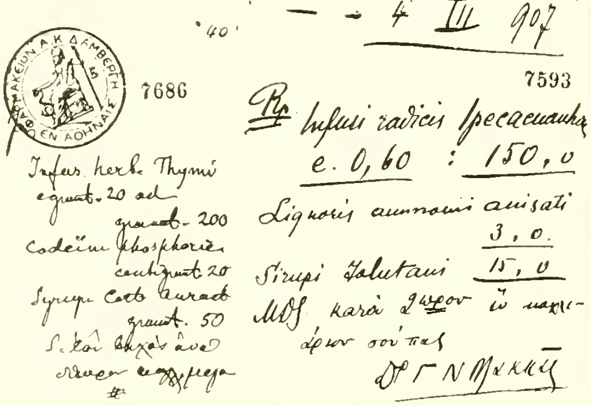
This is about 3 in. long by ¾ in. at the centre circle. It is printed in violet, and the white lettering and scrolls are embossed. Another dispensing-label reads :

Dieſe Arznei darf ohne erneute ſchriftliche Verordnung des Arztes nicht repetirt werden.

This medicine may not be repeated without written order of the physician.

GREECE.

The medicines most in use in Greece are the quinine salts, castor oil, various combinations or iron, arsenic, mercury, ipecacuanha, opium, iodine, and bromine. I give below a couple of typical prescriptions :



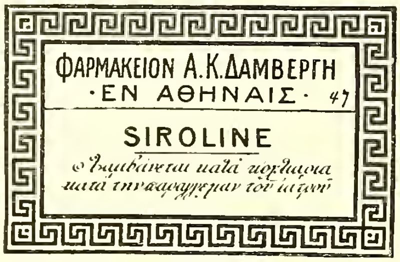
"40"
7686
Infus. herb. Thymi
e grant. 20 ad
grant. 200
Codeini phosphoric.
centigrant. 20
Syrup. Cort. aurant.
grant. 50
S. [illegible]

4 III 907
7593
Rp. Infusi radicis Ipecacuanhae
e. 0,60 : 150,0
Liquoris ammonii anisati 3,0
Sirupi Tolutani 15,0
MDS κατὰ [illegible]

Dr. Anastasios K. Dambergi, Professor of Pharmaceutical Chemistry at the National University, Athens, possesses a pharmacy, which he apparently correctly designates a "model" pharmacy. In addition to ordinary routine pharmacy, clinical analysis is conducted, pathological research and post-mortem work is undertaken, and radiography and embalming form side-issues.

Greek Labels.

Dr. Dambergi's labels are interesting. He adopts a Wall of Troy pattern border, and all are printed in blue ink with gold lines on some of the more pretentious labels. The engravings and notes sufficiently indicate styles, etc. :



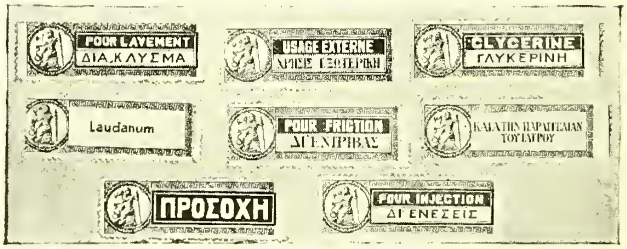
ΦΑΡΜΑΚΕΙΟΝ Α.Κ.ΔΑΜΒΕΡΓΗ
·ΕΝ ΑΘΗΝΑΙΣ· 47
SIROLINE
λαμβάνεται κατὰ κοχλιάρια
κατὰ τὴν παραγγελίαν τοῦ ἰατροῦ

Original 3½ in. by 2⅛ in.

Siroline.

(A preparation of beech-tar containing a large proportion of Guaiacol. In pulmonary affections.)

To be taken in spoonfuls according to doctor's directions.



POUR LAVEMENT
ΔΙΑ ΚΛΥΣΜΑ

USAGE EXTERNE
ΧΡΗΣΙΣ ΕΞΩΤΕΡΙΚΗ

GLYCERINE
ΓΛΥΚΕΡΙΝΗ

Laudanum

POUR FRICTION
ΔΙ' ΕΝΤΡΙΒΑΣ

ΚΑΤΑ ΤΗΝ ΠΑΡΑΓΓΕΛΙΑΝ
ΤΟΥ ΙΑΤΡΟΥ

ΠΡΟΣΟΧΗ

POUR INJECTION
ΔΙ' ΕΝΕΣΕΙΣ

A set of labels supplied in perforated sheets, printed in pale-blue ink. Size 2 in. by ⅝ in.

GUERNSEY.

The pharmacy of the Channel Isles does not take long to describe.

Medical men have their own dispensaries, and at least 90 per cent. of the prescriptions handed to the chemist are from English people staying in the islands on holiday. The local prescriptions are partly in French and partly in English.

With regard to the requirements of the public, the preparations *Baume Tranquil* and *Ung. Populeum* are frequently asked for. The former is used for earache, and even toothache. The latter is applied as a breast-ointment, also for piles, and even for softening and curing warts on cows' udders.

"Saunders' Liniment," "Oil of Fives," is used for a number of ailments. The inhabitants have great faith in it, declaring it an infallible cure for sprains, bruises, swellings, toothache, earache, and neuralgia. It is even taken internally for colic, coughs, and asthma. It is composed of spt. camphoræ, ol. caryoph., ol. lavand., tr. myrrh., and alcohol.

My correspondent, Mr. De la Rue, tells me he had a local preparation examined for a customer. This compound had no equal for stiffened joints. It was found to consist of linseed oil 1 oz., chloroform ½ oz., and alcohol (90 per cent.) 2 dr. It also greatly reduces swelling.

Another local preparation greatly in vogue as a digestive and tonic goes under the name of *Smith's Powder*. It is composed of sodii bicarb. 2 oz., p. rhei ½ oz., p. hyoscy. 2 dr., p. cinchon. 1 oz., p. calam. arom. 3 dr., p. galangal 2 dr. Coch. dim. parv. ex aq. bis die.

ITALY.

Notes on General Requirements.

The following peculiarities are worthy of attention :

Cough-pastilles containing narceine for their active constituent.

Eau Hæmostatique Pagliari is in the Pharmacopœia. It consists of benzoic acid, benzoin tincture, alum, and water.

Eau Vegeto-minerale.—Tinct. arnicæ 5, liq. plumbi subacet. 2, aq. 100; m. ft. lotio.

Electuaiare Antiblenorrhagique.—Salol 20, pulv. cubeb. 70, balsam copaiba q.s. ut ft. massa.

Emulsion Gommeuse is made as follows in Italy: Huile d'amandes 20, gomme arabique 20, eau 300, sirop. 20, eau de laurier cerise 3.

Lichen Islandica.—Employed in form of tincture. 20 per cent. is used as an anti-vomitive.

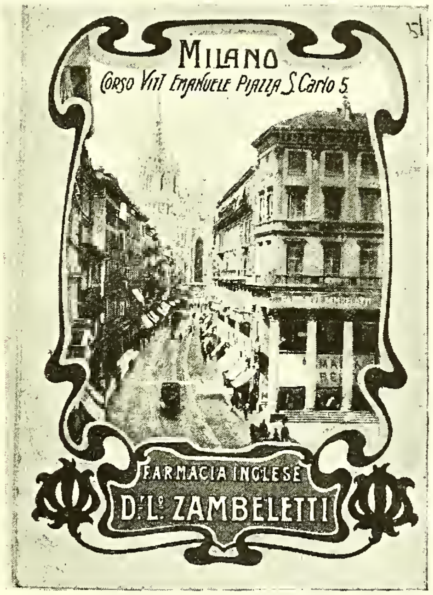
Liqueur Anodine.—Presumably that in F. Ital., liq. anodynus Hoffmanni consisting of equal parts of ether and absolute alcohol.

Roob Sambuci.—This is evidently similar to the confection or rob sambuci in Ph. Ned.

Seidlitz-powder in Italy is composed of magnesium sulphate 15, sodium bicarbonate 2, tartaric acid 2.

Sirope de Ipecacuanha Diacode.—Presumably diascordium similar to that of the Codex—an electuary made with ipecac., teucrium, scordium, and a number of out-of-the-way ingredients, with a small proportion of opium.

I am indebted to Dr. L. Zambeletti, of Milan, for answering several questions with promptitude and accuracy.



Original 4½ in. by 3¼ in.

The above is the front page of a four-page folder. The announcement inside the card is worth reproducing :

All prescriptions are carefully prepared according to the formulæ of the various pharmacopœias by qualified Italian and foreign assistants.

Farmacisti approvati italiani e stranieri sono addetti all'officina farmaceutica, ed eseguiscono colla massima cura ed esattezza tutte le prescrizioni mediche nazionali e straniere, adoperando per ogni prescrizione i medicamenti preparati secondo le farmacopee dei diversi Stati.

La Pharmacie Zambeletti peut fournir tous les médicaments et les spécialités des meilleurs laboratoires d'Italie, de France, d'Angleterre, d'Allemagne et de l'Amérique.

In der Apotheke Zambeletti findet man die sämtliche Spezialitäten Italiens, Englands, Deutschlands und Frankreichs.

Geübte italienische und fremde Apothekern stehen zu Diensten des Publikums.

Alle ärtzliche Verordnungen werden aufs pünklichste bereitet.

Two other pharmacists, M. Elia Coli and M. Ettore Barbi send me a conjoint report, prefacing their remarks with :

Multum adhuc restat operis, multumque restabit, nec ulli nato, post mille sæcula precludetur occasio aliquid adjiciendi (*Seneca*).

In Italy medical men and the general public frequently demand sodium hyposulphite (specially recrystallised). For internal use the dose is from 1 to 6 grammes as a purgative ; its antiputrescent action is said to be superior to that of the sulphite. While passing through the blood circulation it is transformed firstly into sulphite and then into sulphate.

NEW ZEALAND.

Dr. Walter, of Wellington, New Zealand, tells me that it is with the utmost difficulty that the public is induced to take prescribed medicine. On receiving, let us say, a prescription for a good tonic, the patient will dose himself with it for a week and revert of his own accord to an advertised preparation for a few months. The people desire everything in a popular form. For instance, if a mild laxative be ordered for occasional use, in a month the patient will be taking "Indian Root Pills" or Blank's pills, giving as his excuse that "it is a bad thing to get into the habit of taking doctors' medicines"! In the same way women fall back upon gin rather than consume the prescribed useful medicine. In spite of the doctor's warnings against harmful preparations, the women employ sheep-dip for vaginal irrigation. Then, again, even in the large dairy districts they prefer to feed their children on patent foods rather than on cows' milk. If bread-jelly or oat-jelly with milk be ordered for the child, they will prefer the advertised article. Every form of quackery, massage, or mental healing is thought more of than the doctor's advice.

From Mr. Parker, pharmacist, of Wellington, I learn that matters are very similar to those in England. Proprietary medicines are perhaps even more in demand, both British and American—*e.g.*, the popular American Perry Davis's "Pain Killer" in the country districts, especially on the gum-fields, is consumed by the diggers in large quantities, chiefly owing to its being easily carried, and when diluted with water takes the place of alcoholic stimulants.

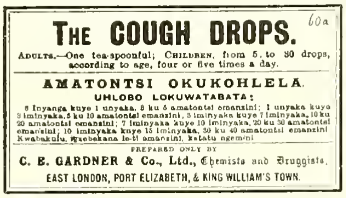
SOUTH AFRICA.

At the outset I ought to state that Mr. G. E. Oliver, of Messrs. C. E. Gardner & Co., East London, Cape Colony, has given himself a very great dealt of trouble in helping me with this portion of the paper.

The business of the average up-country chemist is confined to proprietary articles and Dutch or Kaffir remedies, even in a town of the size of East London there is no such thing as a general dispensing business. Each doctor has his own chemist, to whom he prefers to send all his patients. In some cases two or three doctors have the same chemist.

Special Preparations for Kaffir Use.

As will be noticed from the following labels, it is necessary to give directions in the Kaffir language—frequently both English and Kaffir equivalents are given—a label headed "Umiza ngqe we cgushuwa" without English remains a mystery.



60a

THE COUGH DROPS.

Adults.—One tea-spoonful; Children, from 5, to 30 drops, according to age, four or five times a day.

AMATONTSI OKUKOHLELA.

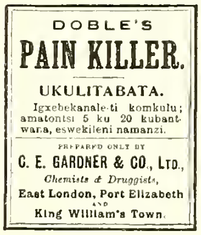
UHLOBO LOKUWATABATA:

6 Inyanga kuye 1 unyaka, 3 ku 5 amatontsi emanzini; 1 unyaka kuye 3 iminyaka, 5 ku 10 amatontsi emanzini, 3 iminyaka kuye 7 iminyaka, 10 ku 20 amatontsi emanzini; 7 iminyaka kuye 10 iminyaka, 20 ku 30 amatontsi emanzini; 10 iminyaka kuye 15 iminyaka, 30 ku 40 amatontsi emanzini Kwabakulu, igxebekana le-ti emanzini, katatu ngemini

PREPARED ONLY BY

C. E. GARDNER & Co., Ltd., Chemists and Druggists.

EAST LONDON, PORT ELIZABETH, & KING WILLIAM'S TOWN.



DOBLE'S

PAIN KILLER.

UKULITABATA.

Igxebekanale-ti komkulu; amatontsi 5 ku 20 kubantwana, eswekileni namanzi.

PREPARED ONLY BY

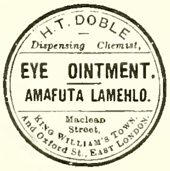
C. E. GARDNER & CO., Ltd.,

Chemists & Druggists,

East London, Port Elizabeth

AND

King William's Town.



H. T. DOBLE

Dispensing Chemist,

EYE OINTMENT.

AMAFUTA LAMEHLO.

Maclean Street,

King William's Town,

And Oxford St., East London.

Dutch Medicines in Use in South Africa.

The Dutch in South Africa are great medicine-takers. Nearly every homestead has a medicine-chest (huis apotheek) containing one each of the medicines described hereunder, and a book of directions for use. When the ailment is difficult for the master of the house to diagnose he mixes several kinds indiscriminately, relying upon one of the ingredients to reach the seat of the trouble. The receipts, it is well known, are very old—they came over, in fact, with the Dutch to South Africa.

The Low Dutch and Kaffirs frequently favour the use of dung and urine of different animals. "Dassie urie" is an ingredient of several Dutch medicines. It is obtained from the runs of the dassie (rock rabbit) among the rocks.

Aanbeij Mixture.—Contains mag. sulph., senna, etc. Remedy for piles.

Amara (Groene Amara).—Popular remedy for strengthening the stomach and to increase digestive power. In colic and stomachic pains. Stated to be prepared by a complicated process from herb. cardui benedict.

Balsam of Copaiba.—Very largely used by the Dutch, who are as keen as any analyst at detection of gurjun balsam (rape oil) or other adulterant.

Balsam Spijker.

Balsam Vitæ or Leven's Balsem.—In apoplectic attacks.

Benaauwdheid Droppels.—A remedy for fits, composed of dassie urie, æther, asafetida, etc.

Bezoard Polder. — Powdered benzoin. No directions. Method of use evidently known.

Bloedstulpende Droppels.—Aromatic sulphuric acid for lung-bleeding.

Bloed Zuiverende Kruiden and extract.—A compound of senna, rhubarb, polypodium, camphor, etc.

Bok Vet.—A hard, white ointment. The fat of various antelopes rendered down and combined with aromatic oils.

Borst Droppels.—A favourite cough remedy, containing aniseed, licorice, and a trace of ammonia.

Buchu Azijn.—An acetic extract of buchu leaves.

Cajuputie Olie.—Dose, 1 to 10 drops on sugar with tea.

Corall Tinct.—In rheumatism.

Diet Herbs.—The contents of the packet to be macerated in a quart of brandy eight days. Dose, a wineglassful. Consists of senna, orange, rhubarb, etc. Similar to Bloed-Zuiverende Kruiden.

Doepa is benzoin.

Doepa Olie.—Balsam of Peru.

Duivel's Drek is obviously asafetida. Asafetida is largely used by the Dutch in combination with benzoin for burning with a view to driving away spooks (ghosts) and other evil spirits.

Endres Droppels.—A compound of asafetida, opium, æther, etc. Given to children for fits and convulsions.

Essentia Amara is groene amara. *Vide* Amara.

Essentia Dulcis.—A preparation distilled from pot. acet., etc. A most intricate and wonderful composition.

Essenz, Leven's Kiesows.—A proprietary preparation.

Essenz, Leven's Augsburg.—A proprietary preparation.

Gal. Pillen.—Well bekend als de beste en gal afrigvende pillen.

Gember.—Ginger.

Gezondheid Drank.

Gezuiverde Epsom Zout.—Purified Epsom salt.

Graauwe Vometief.—Each powder a full dose. This is prepared from the recipe of the late Dr. de Haas. A compound of ipecacuanha and potass. sulph.

Haarlemmer Oil.—Dutch drops.

Haarlemensis.—Dutch drops.

Helmont's Herbs.—Evidently contain red sanderswood and cinchona. For weak stomach, indisposition, headache, difficult breathing. Directions: Add the packet to a bottle of brandy or old wine, and draw in the sun for eight days. Strain, and take 30 drops to half a liqueur glass two or three times daily.

Hoffmann's Droppels.—Known for three hundred years; is spt. æther. sulph.

Jamaica Gember.—Geconcentrade essence.

Kina Polder (White Kina Polder).—Composition, quinine, pot. sulph., and sacch. alb.

Kraam Droppels.—A compound of opium, æther, etc., for spasms and cramp in stomach. Dose, 30 to 60 drops with water.

Kramp Droppels.—Similar to above with asafetida. A remedy for pain and spasm of pregnancy.

Levens Poeder.—See pulvis vitalis.

Maag Bitters.—Stomach cordial bitters.

Maag Polder.—Pulv rhei co.

Milt Essenz.—Contains honey, aloes, myrrh, acid hydrochloric, etc.

Nagel Olie.—Oil of cloves.

Nitri Dulcis.—Spt. æther. nit.

Oog Droppels.—Eye-lotion.

Oog Zalf.—Eye-ointment.

Opwerkings Droppels.

Pijnstillende Droppels. — Pain-killer. Opium, æther, valerian, etc.

Pill. Aanbeij.—Pile-pills.

Pill Anijs.—Aniseed-pills.

Pill Polychrest.—A cure-all purgative. Aloetic, silvered, gr. 1½

Pil. Cont. Obstruct. ½ Loth. A purgative pill containing ol. croton.

Pleister.—The "Nuremberg" brand seems to have a reputation. It is supplied melted and poured into a small oval chip lozenge-box, and, like several others, is marked "Bijzonderlijk klaargemackt volgens de voorshrijven van wijlen Dr. de Haas." There are no directions for use. It looks like our emplastrum adhesivum, and it is assumed that the housewife in that part of the world is fully capable of spreading a plaster.

Poeder, Roode.

Poeder Tegen de Scherpte.—A chalk powder for diarrhœa.

Poeder Witte Vomitief.—White emetic compound of antim. tart. taken in conjunction with grauwe vomitief.

Pulvis Solaris (Zonnen Poeder)—Looks very much the same as

Pulvis Vitalis (Levens Poeder), which is composed of antim. sulphurat.

Purgeer Poeders.—Jalap.

Rhubarber (Stuk Rhubarber) needs no further explanation.

Roode Lavendel.—Tr. lavand. co., a base for administering various drops. Every half-hour one teaspoonful with water in "hart klooping."

Roode Poeder.

Spijker Balsam.—A firm, dark green ointment basis. A compound of various gums (damar, bals. Peru, myrrh, etc.) with an ointment base of resin turpentine.

Stuip Droppels.—Drops for fits. Contains valerian and æther. 5 to 25 drops with sugar and water.

Tandpijn Droppels.—Toothache droppels.

Tincture of Life for Snake-bites.—Presumably a tincture of cohosh.

Turlington Droppels.—Tinct. benzoin. co. Dose, ½ to 1 teaspoonful three or four times daily with sugar or with a teaspoonful of white of egg. Especially used in blood-spitting and chronic chest troubles.

Verdwijn Plijster.—Emp. ferri.

Versterkende Droppels.—Tr. cinchon. co., for a tonic. ½ to 1 teaspoonful.

Witte Lood.—Plumbi carb. In packet. No directions for use.

Witte Vometief.—See Poeder Witte Vometief. One powder for full dose.

Wonder Essenz.—A German proprietary.

Zalf Basilicon.—

Zalf Ruiter's.—Ung. hyd. mitius.

Zinking Snuif.—Dark greenish blue powder. A snuff for headache and neuralgia. Active ingredient, hellebore.

Zonnen Pulver.—*See* Pulvis Vitalis.

Znur Droppels.—A dilute hydrochloric acid.

Zwafel Balsam.—Balsam of sulphur.

Mr. Dixon, of Messrs. C. E. Gardner & Co., gave considerable assistance with these remedies.

RIVER PLATE (Rosario).

An Argentine Pharmacopœia first published about six years ago has some similarity with the Codex. It differs, however, from the majority of Pharmacopœias in that the medicinal properties of drugs and chemicals are stated.

Among some recent items in prescriptions (which are more often written in Spanish than in Latin) may be mentioned:

Alcohol Alcanforado.—Spt. camphorat.

Agua de Alquitran.—Aq. picis.

Agua Vegeto-Mineral.—Eau vegeto-minerale (Codex).

Bicianuro de Mercuro.—Strength 1 in 5,000 is frequently prescribed by oculists.

Essencia de Trementino.—Ol. terebinth.

Evaporaciones.—For inhalations.

Laudano de Sydenham.—Vin opii (Codex), mostly as drops.

Linimento de Stokes, also known as "Untura Bianca." Mr. MacMillan, of Rosario, to whom I am indebted for information, favours the following method of making this liniment:—

> Shake the yolks of five eggs (or entire contents) with water 500 grams, strain, and add Ol. Terebinth 500 grams. Shake, then add Acid. Acetic. Fort. 100 grams, and shake occasionally during a few days to produce a white creamy product.

Limonada Rogé is similar to the Limonade Purgative of the Codex.

Jarabe Brea.—Syr. picis liq.

Ext. Tebaiaco.—Ext. opii.

In dispensing, it should be noted, the doctor's name is written on the label, not the patient's.

(*To be continued.*)

Macassar Copal.—The total exports from Macassar in 1906 were rather less than in 1905 (2,210 tons, against 2,800 tons), although a larger quantity of Loewoe hard gum was exported. This was due to the province of Loewoe having been taken over by the Dutch Government, and there is every likelihood of larger quantities of copal coming forward this year, now that the country is in a more settled state. The prices obtained were better than in previous years.

Antique Bell-metal Mortars

By DANIEL DAVISON, Pharmaceutical Chemist, Cromer.

OUR genial and ever-interesting but somewhat Philistine friend "Xrayser" gave me the impression that he hoped he had heard the last of my mortars. He must forgive me for writing once more. Perhaps there are a few old-fashioned chemists who, like myself, find a charm and attraction in these emblems and implements of our ancient craft, and the still more ancient cult, domestic utility. By the courtesy of the Editor of this journal I was able to contribute to the "Connoisseur" last August an article on antique mortars, which was practically a digest of the articles which had appeared in The Chemist and Druggist. This article proved of considerable interest, judging from the correspondence which has reached me. I have been somewhat surprised at the numbers of people, collectors of antiques in general and outside pharmacy altogether, who have been "picking up" these ancient mortars. There are now quite a number of people in the ranks of connoisseurs who realise that mortars appeal both to the antiquarian and artistic sense, and from them I have gathered much fresh information on the subject generally, and met with many fresh types of mortar.

The last fifty years have seen a wonderful revival in the cult of the collector and the appreciation of antiques, and in these days there are few people of means or position who do not make a hobby of collecting something of an antiquarian nature. So it is not strange that bell-metal mortars have come within the province of the collector and antiquarian. They have become sufficiently rare to be attractive from the view of rarity, and as they frequently bear the impress of the date of their casting, they can be classified into definite periods of artistic style. The decoration or date on a mortar is to the bronze what the hallmark is to silver, and imparts to the metal a value much beyond its merely intrinsic value. Thus antiquity, sentiment, taste, and fashion are gradually operating towards putting these old mortars into a much more honoured position.

Nine years ago the late Miss Florence Peacock contributed a series of articles to the "Antiquary" and The Chemist and Druggist on these mortars, which probably did a good deal towards reviving interest in them. She gathered much information, and got into touch with collectors, and arrived at the conclusion that the finest private collection of mortars then existing in England was that of Mr. England Howlett, of Kirton-in-Lindsey, who possessed nine specimens, six English and three Dutch. Since then so much have these things been sought for and appreciated that I now know at least a dozen people who have as good a collection as Mr. Howlett, whilst in dozens of country houses the mortar has been exalted from the kitchen mantelshelf to the drawing-room cabinet and treasured among the household gods. Personally I have had exceptional opportunities of picking up old mortars. My articles have brought me to the knowledge of those who have these things to dispose of, and I am doubtless looked upon as some mild form of lunatic who, instead of following the orthodox philosopher's method of transmuting baser metal into gold, can be to some extent relied upon to reverse the process. My collection has consequently grown to upwards of seventy mortars, every one of which has been acquired within the last thirteen years. I very much question whether it would be possible for anyone to begin *de novo* and secure as complete and representative a collection within the next thirteen years, particularly as regards English mortars. I have fifty English mortars in my collection, and my experience convinces me that there are more dated and decorated Dutch and Continental mortars in England to-day than those of English origin. I know it is easier to meet with Dutch specimens if one wants to purchase.

I have consequently rather specialised in English mortars. I am quite confirmed in my previous belief that it is exceedingly rare to meet with an English sixteenth-century mortar *dated*. I have only heard of three besides the mortar of St. Mary's, York. I have had particulars sent me of perhaps a hundred English mortars, but with the above exception those dated have all been seventeenth-century pieces or later. I have met with many mortars which it is safe to assume were of an earlier period even than the sixteenth century, but there is no date to substantiate the assumption.

I have been struck with one rather noticeable fact as regards the very large mortars—trade mortars, if one might describe them as such—which have been brought to my notice, which is that they nearly all originate from one foundry. The general outline and conventional bands of ornamentation are common to these mortars. A typical example was given in my first article. They vary in weight from 60 lb. to close on 2 cwt., and were made at the celebrated Whitechapel Bell-foundry, which was established in 1570. Messrs Mears & Stainbank, the present proprietors, have given me the following chronological list of the owners of this foundry. The original foundry was at Essex Street, Whitechapel, but was removed to its present address, 34 Whitechapel Road, in 1738. It is rather a remarkable instance of a long-lived business to date from 1570 and to be flourishing in 1907 :

Mot, Robert ...	A.D. 1570
Carter, Joseph ...	,, 1606
Carter, William ...	,, 1610
Bartlet, Thomas	,, 1619
Bartlett, Anthony	,, 1647
Bartlet, James ...	,, 1676
Phelps, Richard ...	,, 1702
Phelps & Lester ...	,, 1735
Lester, Thomas ...	,, 1738
Lester & Pack ...	,, 1752
Pack & Chapman ...	,, 1770
Chapman & Mears	,, 1782
Mears, William ...	,, 1784
Mears, William & Thomas	A.D. 1787
Mears, Thomas ...	,, 1791
Mears, Thomas & Son	,, 1805
Mears, Thomas the Younger	,, 1810
Mears, Charles & George	,, 1844
Mears, George, & Co.	,, 1861
Mears & Stainbank	,, 1865
to date,	1907

The following noted bells are from this foundry :

The great bell of Westminster, the largest ever cast in London, weighs 13 tons 10 cwt. 3 qrs. 15 lb.
The great bell of Montreal Cathedral, 11 tons 11 cwt.
Great Peter of York Minster, 10 tons 15 cwt.
Great Tom of Lincoln Cathedral, 5 tons 8 cwt.
The clock bells of St. Paul's Cathedral.
Bow Bells, Cheapside.

I may say that mortars are no longer made at this foundry. Some of your readers may possess mortars with the name or initials of one of the proprietors since 1570.

Among the more interesting of the mortars I have heard of which I consider came from the Whitechapel foundry is one now in the possession of Dr. A. S. Cumming, of Edinburgh, who sent me photograph and particulars. The inscription is "Dinah Fenn, 1662." This mortar was part of the paraphernalia connected with a proprietary pill once famous in the North. The last representative of the family gave it to Dr. Cumming, and with it all the apparatus. As this is so recent, some reader of THE CHEMIST AND DRUGGIST may be able to give some further information on the subject of Dinah Fenn and her proprietary pill. Another very fine mortar of similar type belongs to Mr. Walter Cash, of Coventry. This weighs 210 lb., and has the inscription, "Thomas Bartlett made me for Gideon Delaune, 1625."

DINAH FENN MORTAR.

Another interesting type of mortar of which several examples have been brought to my notice is that made by Vanden Gheen. I have heard of at least six of these. They are of rather fine work and metal, and mostly sixteenth-century pieces. They are peculiarly attractive by reason of the date and maker's name, which are invariably present. Strange to say, I have not been able to find any mention of a mortar from this foundry previous to my first article in THE CHEMIST AND DRUGGIST. So it has been very strange to meet with so many as six since then; it rather points to these having been brought over from the Continent of late years. [Many Dutch mortars are modern from old moulds.—EDITOR.] The following are the recent additions to my collection which are of greatest interest :

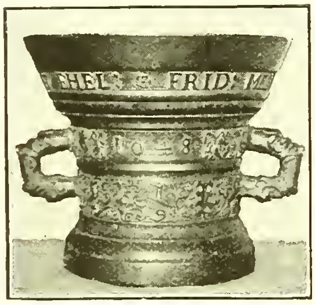
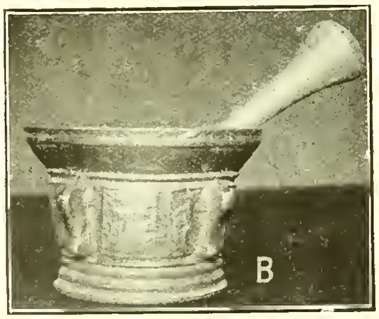
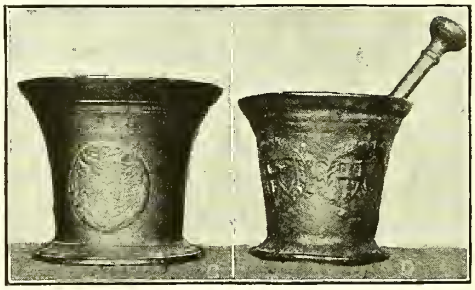


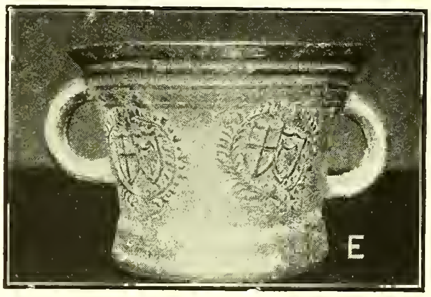
Fig. A above is a handsome Dutch mortar in perfect preservation, which may justly be considered one of the best examples of this type of mortar; it is just over 7 in. high, 8 in. across the bell, and weighs 20 lb.; the inscription in clear casting below the rim is :

FRID ◊ MEINOLPHUS. LANGEN. BERN ◊
MORLET EHEL ◊

There are two bands of beautiful decorations that round the waist of the mortar being female heads of a Dutch type, alternating with cherub-faces between plumes and pinions; the date, 1648, is in the centre of band. The lower band of ornament is that of rampant stag and hound with floral design. The whole decoration is very sharp and clear, the execution being highly artistic. The handles are the usual dolphin form peculiar to these mortars. Fig. B is a quaint little Spanish mortar, with curious lettering and decorations in a series of panels round the mortar. I cannot interpret the meaning of the lettering as a whole, but certain emblems are distinct—*e.g.*, the cross. This seems surrounded with palm-branches; the other panels appear to contain the capitals P, J, N, O, X, V; but some are inverted, so it is impossible to get at any meaning. Each letter is surrounded with floral emblems. The mortar weighs 5 lb., is $3\frac{1}{2}$ in. high, and 5 in. across the bell. I know of no other like it. The letters are Lombardic capitals, such as were used before the introduction of black-letter type.







The English mortars I have added are a very fine lot. Figs. C, D, and E are certainly among the most interesting. They represent a period which is one of the most momentous in English history, and objects definitely identified with that period are rare and much sought after. If these mortars were one hundred times as small and in silver they would create enthusiasm in those who collect old silver, their intrinsic metal value being quite lost sight of and the sentimental value predominating. Therefore I may be pardoned for feeling rather happy in possessing these fine pieces of Stuart and Commonwealth bronze. Fig. C is 5 in. high, $5\frac{1}{2}$ in. across the bell, and weighs 5 lb. It is quite plain with the exception of the usual lines round rim and two raised medallion-like ornaments enclosed in a well-defined ring; these represent the arms of Charles I. and the royal monogram, C.R. It is very probable that the mortar was in the royal household or belonged to the Court apothecary. I have not heard of another mortar so definitely connected with Charles I. period.

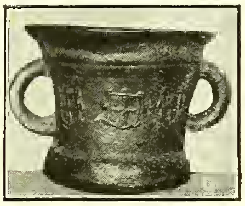
Figs. D and E represent two most interesting mortars of Commonwealth period. The latter piece is exceptionally fine; they each have the arms of the Commonwealth four times repeated. The casting is rough, the outline rugged and plain. I know of three other Commonwealth mortars. One is in the possession of Mr. C. J. S. Thompson, of Cricklewood, and illustrated in his book "Romance of Alchemy and Pharmacy." Mr. Thompson considers these mortars belonged to one of the State apothecaries. So great was the bitterness towards the Commonwealth after the Restoration that it is remarkable that articles bearing the hated emblems were not destroyed.

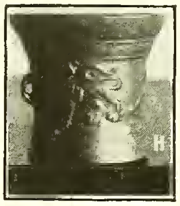
The next figure is of the smallest English mortar I have seen. It is only 3 in. high, $3\frac{1}{4}$ in. across the bell, and weighs only 2 lb. It possesses the peculiar polish which comes only from continual hard wear; it has inscription below the rim :

EDWARDE ◊ CAREWE ◊ 1640 ❀

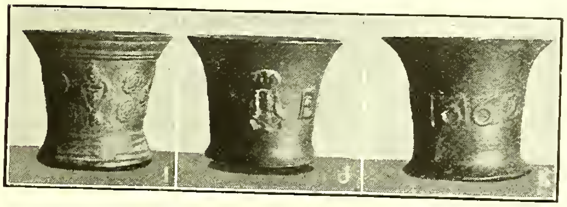
The full name such as this is rare, and makes the mortar interesting, particularly as the name is that of such a distinguished West-Country family. The decoration below waist is a conventional design of cornucopias and scroll-work. There were originally two square staple handles; one is now missing.

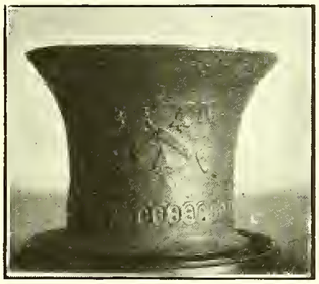
Fig. G is a fine Old English mortar which is probably of the same period as the handled Commonwealth mortar, which it greatly resembles. It has as decoration the arms of the City of London, six times repeated; it is 5 in. high, nearly 6 across the bell, and weighs 7 lb. I have never heard of or met with another mortar with arms of the City of London. Fig. H is a beautiful and very early English mortar; it is not dated, but the decoration is of an extremely early type, such as is found on very early silver. It is probably of the pre-Stuart period. The lion is three times repeated. This mortar has the polished patined surface. It has a small ring-staple projection, which was probably to enable it to be chained to the table or bench for which it was intended. This is a peculiarity of early pieces. The mortar is 4½ in. high, 5 in. across bell, and weighs 4½ lb.



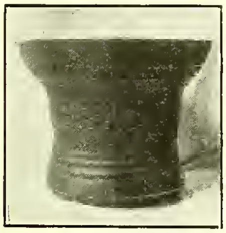


Figs. I and J represent two English mortars, both of which I should consider Charles II. period—one undoubtedly is. Fig. I has an acorn with oak-leaves, roses, and a mask enclosed in a wreath. Fig. J has the well-known features of the Merry Monarch and the date 1665; also the initials E.N. I have three other mortars of the same make, and later refer more fully to the founder. The last of the trio, K, illustrates another mortar, and has initials E. N. and date 1662. The initials are divided by a bell.





The above figure shows the best example of these mortars with E. N. initials; it is a beautifully cast piece, and full of interesting decorations which are so clear that they explain themselves—the occurrence of linked hearts and what appear to be aces of diamonds with crowns. This mortar is a beautiful bronze green; it weighs 4 lb., is 4½ in. across bell, and 4 in. high; it has been much used, as the base is beaten out so much that it revolves like a top.



Another View of the Dinah Fenn Mortar Illustrated on P. 156.

Fig. M is a very early English mortar, with the crudest attempt at decoration. I should consider this a fifteenth- or sixteenth-century piece, or even earlier. The shape is very unusual, and quite unlike any other mortar I possess. It is massive and rough cast, and is only 3½ in. high, but 5½ in. across the top. It weighs 6 lb. The decoration is twice repeated. I know of one other mortar such as this.

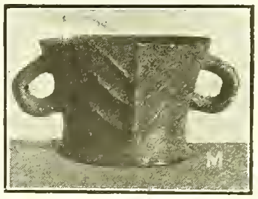
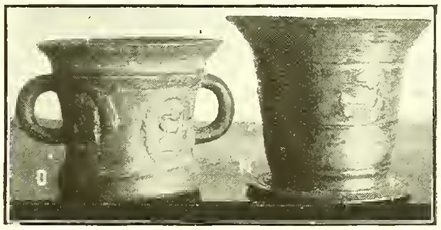
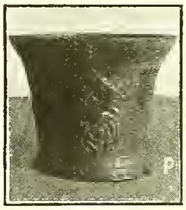
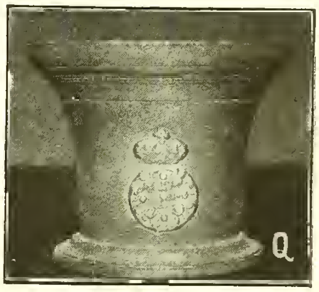


Fig N is a mortar of a different type from the preceding specimens; it is not so massive, and more like brass than bronze. It is, however, bell-metal, but the spreading base is quite of the type of brass mortars. The decoration, four times repeated, appears to be a squirrel seated on a coronet; but the casting is poor, and the mortar has been so scoured and cleaned that it has become indistinct. It is nearly 6 in. high, about 7 in. across the bell, and only weighs 6 lb., being a strange contrast to the previous mortar. Fig. O is a very nice specimen; it is somewhat roughly cast, but rather ornate in character, having a griffin or birdlike figure with a key in its beak, enclosed in a conventional heraldic wreath. The bird or griffin is collared with a kind of coronet. This mortar is also of a rather light-coloured metal. It is 5½ in. across bell, 4½ in. high, and weighs 7 lb.



Figs. P and Q illustrate variations of the rose-and-crown type of mortar. P is undoubtedly English, while Q is more probably foreign, as the crown is more of the Imperial character, such as Austrian or Russian.





Figs. R, S, T are three examples of Fleur-de-Lis decoration, the last being a modern piece—probably not more than seventy-five to one hundred years old. It has to all appearance never been used. There is a great falling-off in artistic excellence; the fleur-de-lis is out of all proportion to size of mortar.

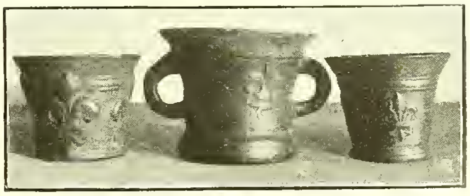
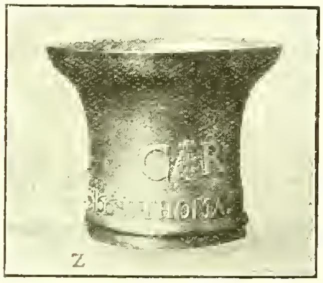


Fig. U illustrates another Charles II. mortar, showing variety in wig, face, and crown.

The group of mortars illustrate a collection in the possession of Mr. Wm. J. Mercer, of Margate, who has been a collector of mortars for several years, and who has a fine collection.

By the courtesy of the Editor of this journal I have received the photograph of a fine mortar belonging to Mr. W. H. Wilson, chemist, Bradford-on-Avon. This is particularly interesting to myself, because it clears up the point respecting the founder whose initials occur on the group of mortars I have alluded to earlier as E. N. types. This mortar is of the same shape, has same style of lettering and numeral, and may distinctly be considered as originating from the same foundry. It will be noticed that my mortars are all small; therefore the founder had to be content with displaying his initials only with the other form of decoration; while in the case of Mr. Wilson's mortar its large size—*i.e.*, 9 in. in height, 11 in. across bell, and weight 55½ lb.—enables the full name to be displayed round the base of mortar—viz., "Edward Neale, 1664. Thomas Caels." I consider the latter name to be that of the person for whom the mortar was made, as my mortars of the same date have the initials E. N. only. If the makers were a firm of Neale & Thomas Caels it is probable that both sets of initials would have appeared.



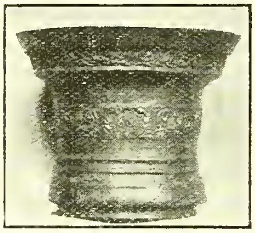
In the article I contributed to the *C. & D.* of January 30, 1904, I described and illustrated a mortar (figs. 1 and 2) having the inscription "Henrye Neale made mee 1631." This mortar presents many points of resemblance to the E. N. group, particularly in the use of a heart as a stop between the words of the inscription. In all probability Henry Neale was the predecessor of Edward Neale. If any chemist has access to local histories of the church-bells of his particular county he could doubtless ascertain the history of Edward and Henry Neale. I have searched the histories of the church-bells of Norfolk, but no such bell-founder is mentioned. I should expect Oxford or its neighbouring counties to be the possible origin of these mortars.

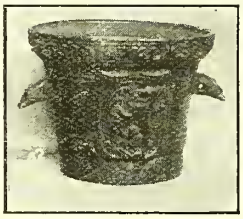
Figs. A 1, A 2, A 3, A 4, and A 5 represent a collection of exceptionally choice mortars I have recently purchased. From an artistic standpoint, they are perhaps the best I have.

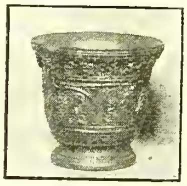
A 1 is an English mortar of fine shape and very finely executed decoration; it is 5¾ in. high, 7¼ in. in diameter, and weighs 15 lb. The decoration is wreath and foliage, and on the band round waist is a disc on which are cast the initials S. S., Ebor. These refer to S. Sellors, who was a well-known bellfounder of York in the latter half of the seventeenth century. A 2 is the earliest *dated* English mortar I possess, and Iknow of none dated earlier but that of St. Mary's, York. It is a beautiful specimen, 4 in. in height, 5¼ in. in diameter, and weighs 6 lb. It bears round the rim the Latinised English name of its owner,

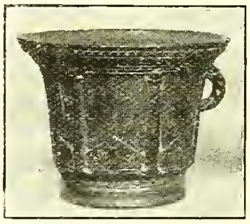
✠ SVM ✠ PHILIPPI ◈ PALMERII ◈
M ◈ CCCCC ◈ XXXVI ◈

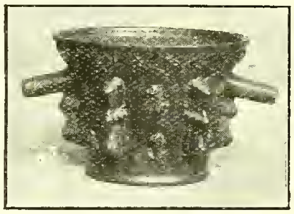
"I am Philip Palmer's. 1536." There are two gargoyle-like projections drilled to take a chain. In profile they resemble the head of a fowl, but are really grotesque faces. The shield has a rampant heraldic lion or griffin. The mortar is perfect; the surface is a rich polished black bronze. This mortar is worthy of a museum, it is such a fine specimen of early English casting. A 3 is a delightful example of early Florentine work; it is a tiny little mortar, the work being the more interesting by reason of its minuteness. This mortar is 3½ in. high, 3½ in. in diameter, and weighs 2½ lb. The photograph does not do anything like justice to the beauty of the decoration. Round the waist of the mortar the decoration is vine pattern, starting from the centre with two vine-branches ringed to form an initial letter H. They run round the mortar and break out into vine-leaves, vine-tendrils, and bunches of grapes. On the rim of the mortar are two finely executed masks, a series of birds and animals, one vine-leaf, and one bunch of grapes. The period of this mortar is considered by an expert as fifteenth century. There is with the mortar the original pestle, which has unfortunately been omitted from the photograph. The tone of this mortar when struck is particularly fine. Fig. A 4 is a sixteenth-century Italian mortar, of beautiful shape, and with classic decoration; it is in perfect condition; the surface is polished bronze-green, and is as smooth as burnished brass. It is the finest metal I have met with in the form of mortar. It is a fine bold piece 5½ in. in height, 7½ in. across the bell, and weighs exactly 14 lb. The decoration is clearly shown in the photograph, except that in front of the mortar, opposite the twisted handle, is a shield with the arms of the Medici family—three pills on a plain field, surmounted by a cross. Here, again, the photograph does scant justice to the mortar. Fig. A 5 is an early French mortar, probably fifteenth century; it is 5 in. high, 7 in. across bell, but weighs only 9 lb. The decoration is interesting and unusual. Round the rim are a large number of fleur-de-lis and roses. The curious projections form panels within each of which are two busts of Æsculapius twelve times repeated. The two curious projecting handles are clearly illustrated in the photograph. The annexed figure is of a mortar belonging to a friend; it is very interesting by reason of its peculiar decoration—*i.e.*, a boar-hunt. It is probably German or Dutch make.

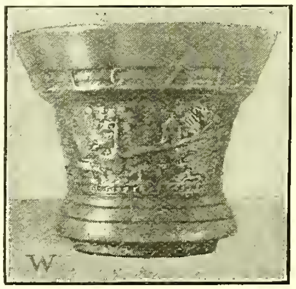












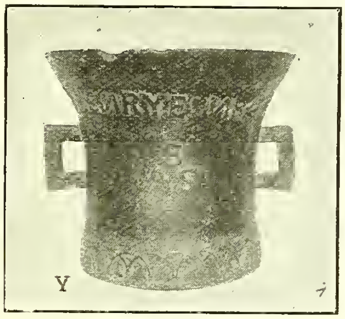
Postscript.

Since this article was written I have gained some information on the group of mortars which I designated E. N. type, or those made by founders of the Neale family. I expected Oxford or its neighbouring county to be the place of origin of these mortars, and, as a matter of fact, they were made in Oxfordshire. It is rather interesting when one has made deductions from certain data that they should prove correct by archæological records. There is no historical record of mortars, except, of course, such as the celebrated York mortar; but the history of church bells is now an established record, and as the bellfounders made the mortars information on these must be sought through the records of bells and bellfounders. In the recorded history of the church bells of Oxfordshire and Gloucestershire bells are found which were made by Henry and Edward Neale at a foundry at Burford, in Oxfordshire, during the seventeenth century. The recorded names of the founders, with the dates of their work, are as follows:

Henry Neale, 1630 to 1641;
Edwarde Neale, 1641 to 1653;
John Neale 1653 to 1656; and
Edward Neale, 1656 to 1683.

The north transept of Burford Church is called the Bellfounders' aisle, and contains the following epitaph on a mural slab:

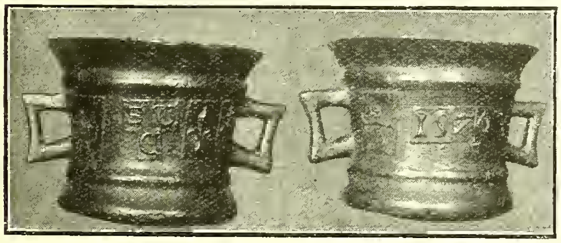
Here Lyeth the Body of Elizabeth the Wife of Edward Neale Belfounder. Deceased August the 8th 1671.
Here May I Rest Vnder this Tombe
Not to be Moved til the day of Doome
Vnless my Husbond who did Mee Wed
Doth Lye with Mee when he is dead.



Henry Neale Mortar.

It is of interest to state that a bellfoundry is carried on in the parish of Burford at the present time; it is, I think, the only foundry in the diocese of Oxford.

The last illustration is a mortar of peculiar interest just now because it was made at Bury St. Edmunds. This town has just been celebrating by way of pageantry its great and historical antiquity. This old mortar, dating back as it does to the age of Elizabeth, bears witness to the excellence of the craftsmen of that ancient town. There lived in Bury St. Edmunds during the latter half of the sixteenth century a celebrated bellfounder named Stephen Tonni, and he it was who cast the mortar, as witness his initials "S. T." for Stephen Tonni and E. for Edmundsbury, as the old rendering of the town goes, and the arms of the town—the crown pierced with two arrows in saltire. There is also a casting representing a coin of Elizabeth next to the 0 of the date. The mortar is a beautiful specimen and in splendid preservation; it measures 4½ in. in height 5½ across the bell, and weighs 7 lb. The early date 1570 makes it very interesting, and its identity is well established, which adds materially to its value. I am inclined to think that the worthy and distinguished brother who holds the high office of Mayor of Bury St. Edmunds will consider this mortar out of its proper place at Cromer.



Medical Gleanings.

Calcium Salts.

Reference has been made on several occasions to the therapeutic effect of calcium salts in increasing the coagulability of the blood. They have been used in the treatment of chilblains, ulcers, and recently in pneumonia and diseases of the heart. In this connection Dr. Joseph Stark gives a warning in the "Lancet" that it is not advisable to increase the coagulability of the blood in pneumonia and heart-disease, as fatal cases of the former are due to clot in the pulmonary artery, and in cardiac disease cerebral thrombosis may be caused.

Diagnosis of Tuberculosis.

Dr. Calmette, Director of the Pasteur Institute at Lille, following up the observations of Dr. von Pirtset, of Vienna, and the scarifying experiments of M. Vallée, of Alfort, conceived the idea of placing a drop of tuberculin previously precipitated by alcohol and dissolved in distilled water in the eye, and he found that if the subject is tuberculous the white of the eye becomes bloodshot. This characteristic reaction is produced within three hours, and lasts for about forty-eight hours. If the subject be healthy, there is no ophthalmic reaction. Dr. Calmette has tried this method of diagnosis on twenty-five patients, of whom fifteen were tubercular, with complete success. He made a communication on the subject to the Paris Academy of Sciences on June 17.

Malta Fever.

The Commission which was appointed under the auspices of the Royal Society about four years ago to inquire into the origin of Mediterranean or Malta fever has just issued a concluding report, which shows that the chief path of infection is milk. It is somewhat remarkable that the Naval Hospital at Malta has always had a very bad reputation in respect of this fever, one-third of the cases among the seamen of the Mediterranean fleet being directly traceable to residence in the hospital. The milk used there is obtained from goats, and examination showed that 10 per cent. of the goats contained germs of the disease. The supply of milk was at once stopped, and since that date not a single case of Malta fever has been traced to residence there.

Eggs in the Diet of Infants.

In cases of digestive disturbance in infants, Dr. Midelton, of Bournemouth, recommends as a substitute for milk the raw white of a large new-laid hen's egg to be added to 8 oz. of water with 40 grains of pure cane-sugar, and to give the infant 1 oz. of this warmed to 98° F. every hour and a half. This is for a baby two days old. On the third or fourth day 5 minims of the yolk of the egg and 5 minims of raw meat-juice are added, the quantities being gradually increased, and 5 minims of cod-liver oil emulsion being afterwards added. Referring to this, Dr. Clifford Last, of New Milton, states in the "British Medical Journal" that the mixture represents approximately 1.3 per cent. of protein, 1 per cent. carbohydrates, and 0.8 per cent. fat, which he considers insufficient, and suggests 30 grains of sugar of milk in place of 5 minims of cane-sugar and 15 minims of yolk of egg, whereby the proteids are raised to 1.6 per cent., carbohydrates to 6 per cent., and fat to 2.4 per cent.

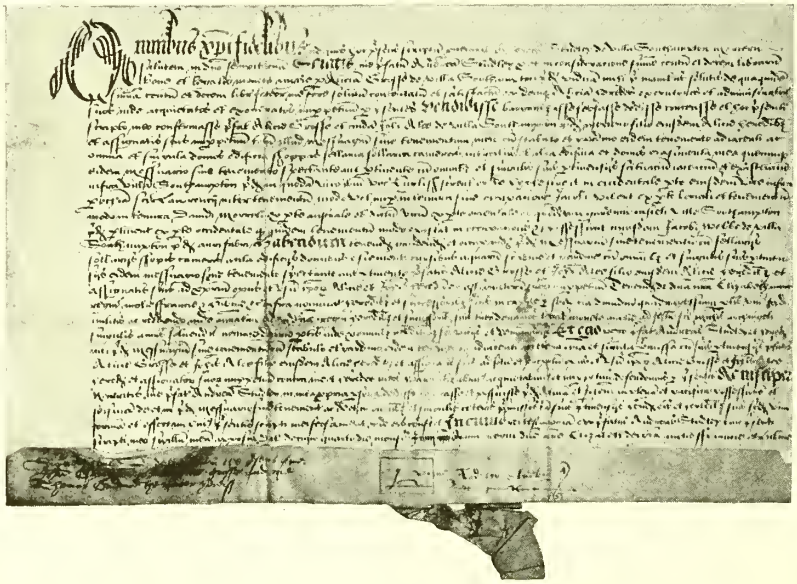
Formic Acid.

Dr. J. C. McWalter communicates an article to the "General Practitioner" questioning the extraordinary commendation of formic acid as a therapeutic agent. He took the 25-per-cent. acid in doses of from two to ten drops, but failed to find any marvellous effects. It was well diluted with water, and even then produced a sensation of fulness and heat in the stomach. It has a slightly stimulating effect on the muscular system, and apparently relieved feelings of fatigue, but rather watchful observation is required to notice these effects. Thus a ten-drop dose is distinctly less stimulating than one minim of liquor strychninæ, and has less of an appetising effect than half a grain of quinine. It has rather a pleasantly refreshing taste, something like the same amount of phosphoric acid, and it appears to augment the digestive process, but not more markedly than the ordinary acids.

FROM THE DAYS OF GOOD QUEEN BESS.

A DOZEN years ago we had the opportunity during the life of the late Mr. W. B. Randall of conversing with him in regard to the history of the pharmacy established at 146, High Street, Southampton, by his grandfather, and continued by his father and himself, latterly in association with Mr. H. Wilson, Ph.C., F.I.C., as partner and managing director of the business.

The results of the conversation referred to were published in the Chemist and Druggist, August 31, 1895, that being about the centenary of the foundation of the business, although since then documentary evidence has been found which shows that William Randall, "chemist and druggist from London," went to Southampton in 1792. When Mr. W. B. Randall got his young partner, Mr. Wilson, from Manchester there was still a fair wholesale department in the old pharmacy, and a remarkably complete manufacturing laboratory, besides a lozenge-making connection. To this Mr. Wilson devoted the early years of his partnership with remarkable success. Then his firm purchased Zion Chapel behind the High Street premises, and he had it divided into two floors, the upper one being made, according to the Board of Inland Revenue's specifications, for the purpose of methylating spirits—an annexe to the business which has grown to large proportions. The firm was incorporated as a limited company in 1902. All the seven signatories to the memorandum of association were pharmaceutical chemists, Mr. Wilson being managing director and holding most of the ordinary shares. The company early this year acquired the last remaining bit of the freehold upon which its business premises stand; a fact which Mr. Wilson suggested to us was not devoid of historic interest. "In what way?" we asked, and in reply Mr. Wilson has sent us a large bundle of remarkable documents bearing upon the property which go back to the days of Queen Elizabeth. One, which we place in the centre of this page (photographically reduced), is the first of the series, and it happens to be the one most suitable for reproduction. If we give a list of the more important deeds, it may help those inexperienced in the matter of English freeholds to realise how intricate the holding of land has become through persisting legal obligations. We mention the deeds executed in the reigns of Queen Elizabeth and the Stuart Kings (there are none of the reign of James II.) :



1. 1576, June 14, 18 Elizabeth.
2. 1576, Oct. 23, ditto.
3. 1582, Mar. 8, 24 Elizabeth.
4. 1582, Aug. 4, ditto.
5. 1582, Aug. 6, ditto.
6. 1603, Nov. 19, 1 James I.
7. 1615, Dec. 1, 13 James I.
8. 1629, Dec. 16, 5 Chas. I.
9. 1668, Aug. 22, 20 Chas. II.
10. 1682, Oct. 25, 34 ditto.

The next deed is dated August 30, 1754, and four intervene between that and June 1, 1792, in the reign of George III., when William Randall acquired the property mentioned in the first deed. The last is dated November 6, 1867, the late Mr. W. B. Randall being a party to the transaction, and this, with all the rights covered by the preceding, was acquired by Randall & Son, Ltd., early this year, when the matter was described as "the freehold properties known as No. 146, High Street; Laboratory, Lansdowne Lane; and Zion Hall, Southampton, all of which are in the occupation of the company."

The facsimile which we give is of a Feoffment from Andrew Studley, a mercer, of Southampton, who, for 110*l.*, sold the messuage or tenement with the stable and garden, and all houses, edifices, shops, cellars, sollars, vaults, passages, and other edifices, etc. It is also mentioned that "a certain garden belonging to the castle of the town of Southampton," bounded the property. In a later deed (1754) "the ditches belonging to the ruinous castle" are referred to.

We are indebted to Mr. C. C. Bell, late of Epworth, and his son (Mr. H. I. Bell, of the British Museum) for full transcripts of the second and third deeds of Queen Elizabeth. For some reason the former is endorsed No. 1, and Mr. H. I. Bell's transcription and translation are as follows :

Sciant presentes et futuri quod ego Andreas Studley de villa Suthampton mercer pro et in consideracione summe centum et decem librarum legalis monete Anglie mihi prefato Andream (*sic*) per Aliciam Grosse viduam et Johannem A Lee de villa Suthampton predicta ad sigillacionem presentium bene et fideliter persolutum et satisfactum Remicisse (*sic*) relax asse et omnino pro me et heredibus meis imperpetuum quiete clamasse prefatis Alicie et Johanni heredibus et assignatis suis ad solum et proprium opus et usum ipsorum Alicie et Johannis heredum et assignatorum suorum imperpetuum in suis plenis et pacificis possessionibus et seisinis existent(ibus) totum jus meum titulum clameum interesse et demanndam quod unquam habui habeo seu quovis modo in futurum habere potereo (*sic*) de et in toto illo messuagio sive tenemento shopis scellariis sollariis aula cameris domibus easiamentis stabulis et aliis edificiis cum gardino eidem tenemento adiacentibus ac etiam de et in omnibus et singulis suis pertinentibus eidem tenemento sive messuagio quoquo modo spectantibus sive pertinentibus scituatis iacentibus et existentibus in villa Southampton predicta in parochia sancti Lawrencii in occidentali parte cuiusdam vici ibidem vocati Inglyshe Streat or the Hiegh Streat inter tenementum Jacobi Vybert ex parte boriali et tenementum modo in tenura Davidii Morrell ex parte australe et gardinum eidem tenemento adiacentem pertinentem castello dicto ville Suthampton ex parte occidentali et vicum predictum ex parte orientali *Ita videlicet, quod* nec ego prefatus Andreas nec heredes mei nec aliquis alius per nos pro nobis vice seu nomine nostro aut alicuius nostrorum aliquod ius titulum clameum interesse et demanndam de vel in predicto tenemento sive messuagio ac ceteris premissis seu in aliqua inde parcella de cetero exigere clamare seu vindicare poterimus nec debemus sed omni accione juris titulo clameo usu possessione interesse et demannda simus inde penitus exclusi et quilibet nostrum sit inde penitus exclusus imperpetuum per presentes. *Et ego vero* prefatus Andreas Studley et heredes mei predictum messuagium sive tenementum gardinum et cetera omnia et singula premissa cum suis pertinentibus predictis Alicie Grosse et Johanni A Lee heredibus et assignatis suis ad proprium opus et usum predictorum Alicie et Johannis heredum et assignatorum suorum contra me et heredes meos warrantizabimus acquietabimus et imperpetuum defendemus per presentes. *In cuius* rei testimonium ego prefatus Andreas Studlye huic presenti scripto meo sigillum meum apposui. Data vicessimo tercio die mensis Octobris anno regni domine nostre Elizabethe Dei gratia Anglie Frauncie et Hibernie Regine Fidei Defensoris etcetera Decimo octavo.

Per me Andream Studley, (and) Signed sealed and deliuered in the presens of petter Janv, vyttner and John Androsson and me Thomas Goddard the writter hereoff.

Translation.

Know all men present and to come that I Andrew Studley of the town of Suthampton, mercer, for and in consideration of the sum of a hundred and ten pounds of lawful money of England to me the aforesaid Andrew by Alice Grosse, widow, and John A. Lee of the town of Suthampton aforesaid at the sealing of these presents well and truly paid and discharged have remised, released and altogether for me and my heirs for ever quitclaimed to the aforesaid Alice and John their heirs and assigns to the sole and proper use and benefit of the same Alice and John their heirs and assigns for ever in their full and peaceful possession and seisin now existing all my right title claim interest and demand which at any time I had have or in any way hereafter may have of and in all that messuage or tenement shops sellars balconies (?) hall chambers houses easements stables and other buildings with the garden to the same tenement adjoining, and also of and in all and singular its appurtenances to the same tenement or messuage in any way belonging or appertaining, situated lying and being in the town of Southampton aforesaid in the parish of St. Laurence in the western part of a certain street there called Inglyshe Streat or the Hiegh Streat between the tenement of Jacob Vybert on the north side and the tenement now in the tenure of David Morrell on the south side and the garden to the same tenement adjoining, appertaining to the Castle called (the Castle) of the town of Suthampton on the west side and the aforesaid street on the east side. In such manner namely as that neither I the aforesaid Andrew nor my heirs nor any other person by us for us or in our name or behalf or (in the name or behalf) of any one of us can or ought to exact claim or vindicate any right title claim interest and demand of or in the aforesaid tenement or messuage and the other premises or in any parcel thereof from henceforth, but are and each one of us is from all action of right title claim use possession interest and demand wholly debarred for ever by these presents. And I the aforesaid Andrew Studley and my heirs the aforesaid messuage or tenement garden and all and singular the other premises with their appurtenances to the aforesaid Alice Grosse and John A. Lee their heirs and assigns to the proper use and benefit of the aforesaid Alice and John their heirs and assigns against me and my heirs will for ever warrant acquit and defend by these presents. In testimony whereof I the aforesaid Andrew Studlye to this present writing my seal have affixed. Given the twenty-third day of the month of October, the year of the reign of our Lady Elizabeth by the grace of God of England France and Ireland Queen Defender of the Faith etcetera the eighteenth. By me Andrew Studley.

It is interesting to note that the property which was sold in these far-back days for 110*l*. was valued 326 years later at 6,225*l*. The deeds help to fix approximately when the present business was established, seeing that William Randall acquired the property in 1792. He was succeeded by his son, Edward Mayor Randall, a member of the Apothecaries' Company, London, who traded under his own name until he was joined in partnership by his son, William Brodribb Randall, when the firm name became Randall & Son. They were chemists to Queen Victoria. Mr. Wilson joined Mr. W. B. Randall as a partner in 1894, having for over eight years previously been in the laboratories of Messrs. James Woolley, Sons & Co., Ltd., Manchester. He had been a fellow apprentice with the new President of the British Pharmaceutical Conference (Mr. R. Wright) in the pharmacy of Dr. John C. Thresh at Brixton. He is a whole-hearted enthusiast in regard to pharmacy, and the present position of the Randall business sufficiently indicates his keenness on the commercial side.

Mr. H. Wilson.

Manchester Royal Infirmary.

THE medical history of Manchester is bound up with that of the Royal Infirmary, the building of which is such a conspicuous feature of Piccadilly. The infirmary was founded in 1752 at a time when such institutions were comparatively rare. Additional wings were added from time to time, such as a lunacy ward and fever department, but these were removed to more suitable sites as soon as the requirements were better understood. The infirmary with its subsidiary branches has a capacity for treating about 1,000 patients annually, exclusive of accidents, averaging 13,000, and out-patients. In 1905 nearly 85,000 patients attended the out-patients' department, and in 1906 75,000. The annual expenditure of the infirmary amounts to 20,000*l*., but this will probably be much exceeded when the new infirmary, which is being built in Oxford Road, is ready. The total cost of the new buildings will be nearly 500,000*l*., and there will be beds for some 600 patients. There will be a central branch for out-patients and minor accidents. Much could be said of the celebrated physicians and surgeons who have been connected at one time or other with the infirmary, but we must confine ourselves to the pharmaceutical side. The large number of patients naturally requires perfect organisation in the dispensary. The rule at this institution is only to employ dispensers holding the pharmaceutical qualification. The hours of duty are 8.30 A.M. to 6 P.M. From 8.30 A.M. to 9.30 A.M. the dispensing for the in-patients is done, although any urgent medicine

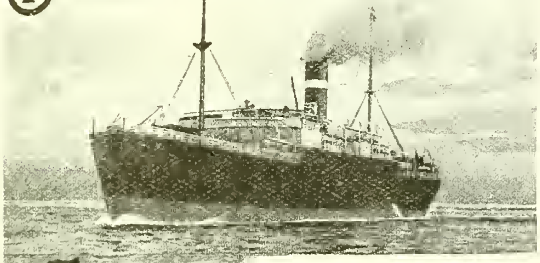
Mr. H. M. Massingham.

Mr. W. H. Butchers.

The Royal Infirmary.

or drugs can be obtained at any hour. From 9.30 A.M. to 1 P.M. (or thereabouts) the out-patients are dealt with. From 1 P.M. to 6 P.M. the time is devoted to the in-patients, and as there is no attendance of out-patients in the afternoons the medicines and pharmaceutical preparations are then prepared for the following day. The chemists of this dispensary boast that their dispensing, both as regards accuracy and quality, is equal to that of any retail establishment. There are two honorary consulting chemists attached to the dispensary—Messrs. G. H. Westmacott and A. E. H. Blackburn—both of whom have been referred to recently in the *C. & D.*; they are well known in Manchester pharmacy circles. One of the chief dispensers is Mr. W. H. Butchers. He is a native of Birmingham, but at an early age was taken to Weston, near Newark-on-Trent. He was educated at the Magnus Grammar School at the last-mentioned town, after which he was apprenticed with Mr. L. B. Rowland, Wrexham, and stayed with him for some time afterwards as an assistant. Mr. Butchers passed the Minor in 1903, and, after further business-experience with Mr. J. B. Bayley, Lichfield, Manchester, and Nottingham, joined the staff of the Royal Infirmary. He is keenly interested in the Manchester Pharmaceutical Association. The other portrait is that of Mr. Hugh Mortimer Massingham, who has been connected with the infirmary for the past twenty-eight years. Mr. Massingham passed the Minor in 1878, and possesses a ripe experience in pharmacy which is much valued by his colleagues on the medical and dispening staffs.

DISPENSING ON A LINER



SOME people deplore the fact that such large numbers of able-bodied men are leaving this country to make new homes for themselves in Canada; but as this is the reason why a certain shipping company carried a dispenser, I, at all events, regarded it with satisfaction.

After signing the ship's articles at the Board of Trade offices, binding myself to obey the commands of the master and discharge my duties in a sober and competent manner, I joined the ship, which for the next four weeks was to be my home. Here all was bustle and excitement. The roll was called, the ship's crew inspected. Life-boat drill took place, after which the passengers were taken aboard, each one being examined by the medical officers as all passed along the gangway. Hundreds on the quay waved hats and handkerchiefs, while others here and there were bravely trying to conceal from their friends the sadness of the parting. At last the ropes were let go, and under the charge of two powerful tugs the s.s. *Corinthian* swung slowly into the river Clyde, and thus begun the voyage which to the 1,200 passengers was perhaps the most momentous time in their lives. The tugs were discarded at Greenock, where a few friends and officials gave us a parting cheer; a stowaway was put ashore, and, like a living thing, our ship bounded ahead at full speed.

During the next day or two there were many empty chairs in the dining-saloons; but, as the sea-sickness wore off, they were gradually filled up, till latterly every chair was occupied. The weather was fine, and during the day the decks were alive with people playing skipping-ropes, deck billiards, etc., while others danced to the strains of the bagpipes. It was very refreshing to see the people so happy, and difficult to imagine we were on the Atlantic Ocean.

Next came the vaccination inspection of the steerage passengers. The men were put in rows with their jackets off and shirt-sleeves rolled up, and as the doctor examined their arms I handed each one a card to present to the emigration officer at Quebec. We next took the women and children. Only forty-one required to be vaccinated; all the others had distinct marks. The Sunday forenoon service was held on the after-deck. It was an impressive sight to see over 1,000 people, with the clear blue sky above and the mighty ocean on all sides, standing around listening to the words of exhortation and singing the well-known hymns with all their hearts. A collection was taken for the Sailors' and Orphans' Home. By the next day I was in the full swing of my duties as dispenser. The dispensary was situated on the after-deck, and occupied the same space as a two-berthed room. To the right were rows of shelving, the bottles fitting into a framework cut out to hold each one in its own place and prevent knocking. In a corner was a 2-gal. Slack & Brownlow's filter. Below the shelving was a couch, and underneath it 1-gal. tins of crude carbolic acid and chloride of lime were stored. The poison-cupboard was along the top of the room, and was always kept locked; the bottles being all distinguishable by touch. On the left was a glass case containing such sundries as sponges, rubber plaster, bandages, chip and pill boxes, safety pins, etc. Underneath the case was a small counter with drawers, in which the surgical instruments were stored, among which was a P. D. & Co.'s serum-syringe and a supply of P. D. & Co.'s, B. W. & Co.'s, and A. & H.'s antidiphtheria serum; and in a little cupboard below was a supply of cotton wool, lint, and dispensing-bottles.

Forenoon and evening were the busiest times, and we usually had the afternoon to ourselves. For the first two days very little was wanted, but the work increased gradually. The sedentary life caused a big demand for laxative medicine. Black draught was in greatest demand, while rhubarb and colocynth pills and Gregory's powder were freely asked for. The change of water seemed to give some people diarrhœa. The adults got pil. plumbi c. opio, while the children got chalk-and-catechu mixtures. A great many took sore throats, and these got chlorate-of-potash gargles. Even when raining some people would stay on deck, with the result that liniments and cough-mixtures were in daily demand. In stormy weather the walk along the after-deck to the dispensary was a little exciting, and it was sometimes necessary to catch hold of the life-line placed along the deck. While dispensing one had to perform a few acrobatic feats in balancing. Powders were worst of all to dispense, as the rolling of the ship sometimes caused the contents to jerk off the paper altogether. There were a few accidents, and every day I had a few cuts and burns to attend to, while the doctor attended to the more important cases. On the way out we used a few dozen bandages, nearly a gross each of seidlitz-powders and rhubarb and colocynth pills; while we used about a pint of tr. camph. co., tr. senegæ, tr. scillæ, and glycerin, and 1½ gal. of black draught. As the passengers had none of the every-day household remedies with them we had a lot of trivial wants to attend to.

Time on board passed pleasantly till we got off the coast of Newfoundland, when we ran into banks of fog. For the next three days the weather was cold and raw, reminding one of a Scotch mist, and latterly we had heavy showers of rain. When at last the fog cleared we saw field-ice ahead. This is only seen in the early spring, when the ice on the St. Lawrence is breaking up and making its way down the gulf to the ocean. When this river is frozen over, horses, sleighs, and even trains cross on the ice. The following morning we rose early to view this ever-memorable sight. With the exception of three ships in a line with ourselves, there was nothing to be seen for miles ahead but the white covering of ice, with the water here and there showing through in thin streaks. We backed out of the ice and sailed along the edge of the ice-track all day, while the sailor up the mast kept a look-out for any opening. None could be found, so we began cutting our way through the ice. The ship's sides were creaking as she forced a passage through the huge slabs, which broke away with their edges all covered with paint rubbed off the sides of the ship. As this was a dangerous task, we proceeded with great caution, stopping when the ice was thick and heavy, and ever altering our course when an easier way was found. In the morning and evening it was intensely cold, but during the day we had brilliant sunshine, and it was delightful to sit and watch the huge masses in every conceivable shape and form, and conjure up in our minds what objects they resembled. We continued all the next day and the next cutting our way. We sped along past Anticosta Island and along the New Brunswick coast. As we got closer to the land we could make out the little villages scattered here and there, each one, no matter how small, having its chapel, while the mountains in the background were cold and bleak looking, with patches of snow still remaining. On the Sunday afternoon we reached Father Point and got our pilot aboard, and arrived early next morning at the quarantine station at Grosse Isle. The medical officer gave us our *pratique* and we continued up the river. We got a passing look at Montmorency Falls, and soon after arrived at Quebec. The steerage passengers disembarked here, and joined the C.P.R. trains which were in waiting.

I strolled through the market-place, and bought 1 lb. of hypo. in the photographic dealer's for 5c. At the chemist's I got 4 oz. of syr. hypophos. co. for 25c. No soda-fountain or cigar-counter was to be seen, but there was a fine display of proprietary and toilet articles. At the confectioner's we had a delightful vanilla ice-cream soda ; then climbed up the steps to Dufferin Terrace, on which is a monument to Champlain ; and close by is the beautiful hotel, Chateau Frontenac. There is a fine promenade here, and a commanding view was had of the ships going to and fro in the river. On our way back we visited the Notre Dame Cathedral. Our ship was lying at the wharf underneath the Heights of Abraham, where Montgomery fell. The sail up the river was very enjoyable. Many towns of interest were passed, and the light-painted barges, with their huge sails spread for the light winds, presented a picturesque appearance. On the evening of the sixteenth day we arrived at Montreal. On our way home we experienced some pretty rough weather. Our ship pitched and rolled, and occasionally her rails almost dipped in the water. We had the good fortune to see some icebergs, seven of these huge monuments of ice being seen from the ship at one time. We arrived home in ten days, and after signing off I got my discharge-book from the Board of Trade. Thus ended a bracing holiday, full of incidents which will be for ever memorable. If our calling afforded more opportunities for travel, we should hear less often the reproach that "the chemist weighs in grains and thinks in grains."

Colloidal Metals and Metallic Ferments.

ABOUT ten years ago Trillet succeeded in producing oxydases of certain metals by precipitating weak solutions of metallic salts by means of an alkali in presence of albumin, forming a kind of colloidal solution of the metals. These solutions were found to possess remarkable oxidising properties, and their use as therapeutic agents was therefore suggested. Some years later Bredig introduced what he termed "metallic ferments"—viz., liquids in which the metal was held in suspension in a state of very fine division and had catalytic properties resembling the organic ferments. These liquids were prepared by passing an electric spark through chemically pure water between electrodes of the metal it was desired to incorporate. Gold, silver, platinum and palladium were generally used, but it was found that the kind of metal was immaterial, the catalytic action being due to the physical condition of the metal, and not to the metal itself. The action of electricity diffuses a minute quantity of the metal throughout the liquid, to the extent of about 30 milligrammes per litre ; this metal is in a state of very minute subdivision, and the particles possess that vibratory movement characteristic of both vegetable and mineral particles when suspended in water, first observed by Brown, the botanist, in 1827, and hence called "brownian movements." It is to this brownian movement that the biological activity and ferment-like action of these liquids is due.

In 1901 Robin and Bardet started an extended series of trials with these preparations, and the results of their observations have been from time to time laid before the French societies. Starting with the oxydases of Trillet they soon arrived at the conclusion that they were unsuitable for therapeutic use for various reasons, one of these being the alkalinity of the solutions which rendered them unfit for injection. They then devoted their attention to the solutions of Bredig, and found them to possess remarkable therapeutic properties. Injection into the system showed an immediate definite and constant reduction of temperature, increased excretion of urea and uric acid, and an intensified leucocytosis. A large number of clinical tests were made and these properties fully established. The metallic ferments are thus indicated in pneumonia and allied complaints, and M. Robin has reported on a number of cases successfully treated. This therapeutic action appears to be due to the fineness of the particles and to their movement in the solution. This supposition is confirmed by the fact that, should microscopic examination show these particles to have become agglutinated from any cause, their therapeutic activity is lessened in direct proportion to their loss of comminution.

These solutions are very unstable, and rapidly lose their therapeutic action through agglutination of the particles. All possible methods have been tried to effect their preservation, but none seem to avail. Sterilisation is ineffective, heat rapidly causing the particles to agglutinate. The same result is produced by adding a foreign body as preservative. This, the authors observe, is disappointing from a pharmaceutic point of view, but it is unavoidable, and for the credit of the new remedy it is necessary that solutions should be prepared as required, from pure water previously sterilised, and preserved carefully from dust.

A recent issue of *Nouveaux Remèdes* contains a paper read by M. Bardet at a meeting of the *Académie de Médecine* held on May 28, in which he discusses the statement recently made by Netter that these solutions of Bredig are simply colloidal solutions of the metals, similar in chemical and physical properties to substances like collargol or "colloidal silver." This view M. Bardet holds to be erroneous, for the following reasons :

> The collargols have been shown by Hanriot to be in reality salts in which the silver is combined in the form of an acid molecule to a base, probably as collargolate of ammonia, while Bredig's solutions contain nothing but pure silver diffused in chemically pure water.
>
> Collargol is soluble to the extent of 5 per cent. in water, and the solution may be heated to 100° C. without alteration, and if this be evaporated and the residue redissolved, a solution is again obtained which has practically the same properties as the original.
>
> Bredig's solutions cannot be prepared of a strength at all approaching 5 per cent., heating completely destroys their catalytic properties, and if evaporated the fine division of the particles is destroyed and the residue will not redissolve. Again, collargol is precipitated by nitric acid and the precipitate soluble in ammonia, whereas with Bredig's solution nitrate of silver is formed, which ammonia converts into oxide. M. Bardet, therefore, considers that the difference between Bredig's metallic silver ferment and collargol is conclusively established.

CHINESE WOOD OIL.—The exports from the Port of Wuchow to Hong-Kong increased from 43,160 cwt. in 1905 to 48,329 cwt. in 1906.

SYNTHETIC BALSAM PERU can hardly be distinguished from the genuine Balsam ; it is of a dark brown colour, clear in small stratum, not to be stretched in threads, miscible in an equal volume of spirit of wine, of a scharp itchy, bitter taste, not drying in the air and of a specific weight of 1,145 (according to the Ph. Ph. IV : 1,140, 1,150). 10 drups rubbed with 20 of sulphuric acid give a tenacious lump, which, if after a few minutes cold water is poured over it, shows a violet coulour on its surface and which will crumble if sufficiently washed with cold water. 1 gr. of our Balsam is enough to soap 10,8 ccmn-alcoholic ley of potash (the Ph. G. IV pretends at least 8 ccm), 2,5 g. of our Balsam mixed with 5 ccm of water and 5 ccm of ley of soda cedes to ether 1,547 g. (the Ph. G. IV wants 1,4 at least). The ether-extract wants for soap 12,3 ccm of alcoholic ley of potash (the Ph. G. IV requires at least 11,8).

[We quote the foregoing from a German circular. The English is amusing, but just of the kind that is apt to retard business.]

Chemists' Windows.

A Vibrona Display.

The few photographs which we have received from the Colonies show that our colonial *confrères* make excellent use of their shop-windows. The above engraving represents the window of Mr. S. W. Gayfer, pharmaceutical chemist, Summer Hill, Sydney, N.S.W. The Vibrona exhibit is effective, though not too profuse. Apart from this, there are points in the window worth notice, *e.g.* the coloured carboys at the base.

A Manchester Pharmacy.

The window of Messrs. James Botham & Son's pharmacy, Higher Broughton, Manchester. It is an old-established business, Mr. James Botham, Ph.C., being the founder of it, and his son, Mr. William Botham, Ph.C., his partner.

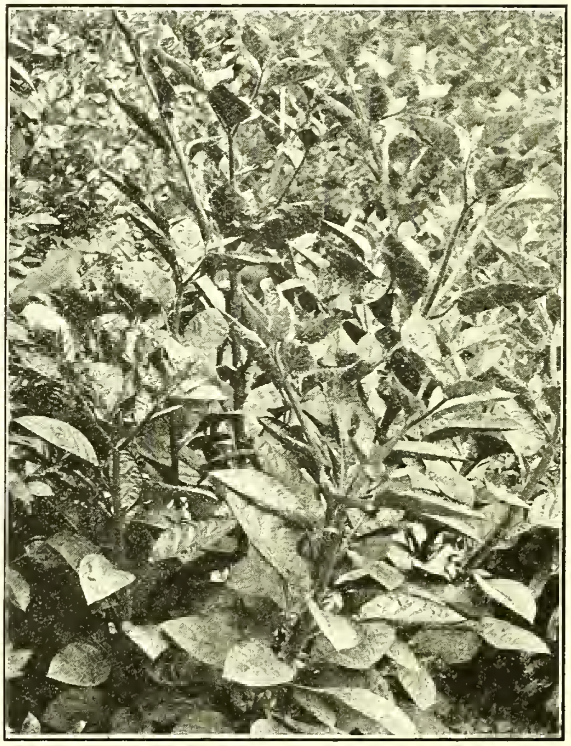
Another "Malted Food" Display.

From the grotesque and flamboyant to the merely "pretty" and æsthetic—changes and contrasts give piquancy, even to chemists' window-shows. In my present exhibition I use old ideas in a new combination. The window is filled with assorted tins of "First" and malted food—the latter in bright yellow wrappers. In the centre a disc (18 in. in diameter), covered with green velvet, revolves very slowly (geared-down motor 350 rev. —1). On the revolving-table are dummy food-tins and a number of recent photographs of our "malt-food babies." The notable departure is the decoration of the window with fresh flowers—white lilies, sweet peas, etc., in Japanese vases—giving the sentimentally pretty idea of an "altar-piece." Recalling the artificial and frequently frowsy floral decorations used in certain soap displays, no valid objection can be raised—save on the very doubtful point of pharmaceutical propriety and usage. It is to be feared that the old orthodox days of the "specie jar" and "large bath-sponges" have gone for ever!—E. Dangerfield (Bedford).

Foaming Eau de Cologne.

Mr. W. Bonser Hayward, 14 Lawrence Lane, London, E.C., agent for M. Bockairy, Paris, has in a short time made the Foaming Eau de Cologne quite popular. The style of window here shown is splendid for displays.

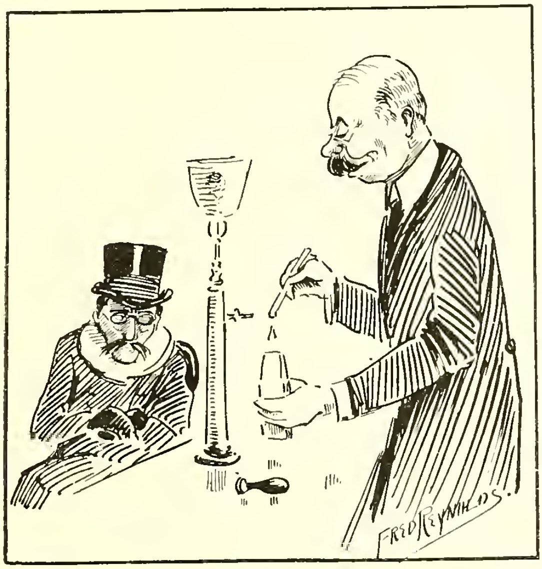
ATROPA BELLADONNA.



Grown and photographed by Mr. W. Frost in the garden of The Bridge Pharmacy, Worthing. Height, 5 ft. 3 in

REYNOLDSIANA.

Sketches by the late Mr. Fred Reynolds, Leeds.



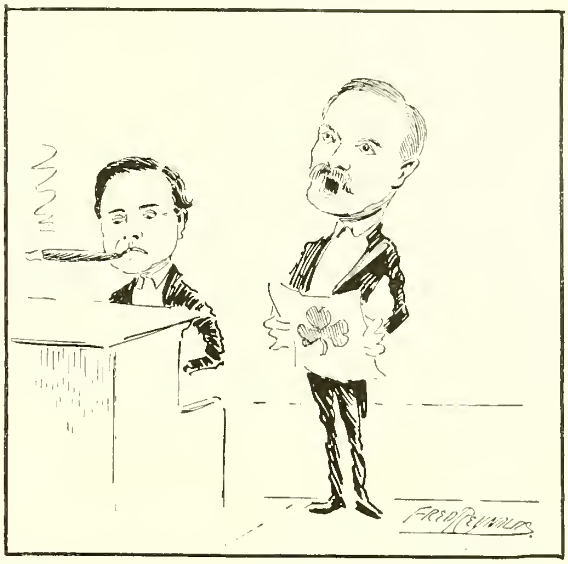
A Counter Incident.

Religiously Inclined Customer (trying to improve the time while waiting for his medicine): "Yes, like gold, we must all be tried in the fire."

Chemist's Assistant: "Well, I hope to come out Radium!"

The Love Philtre.

"The Gentle Art of Training a Servant" is the subject of a series of cartoons by Mr. Lawson Wood which have been appearing in "The Sketch." One in the issue of our contemporary for June 12 reminded us of the above sketch, which has been in our possession for more than a year. There is a striking similarity between the subject, figure, and dress in the above sketch, and Mr. Wood's recent cartoon, wherein the servant had succeeded in producing an explosion in the kitchen-range. There was nothing further from Mr. Reynolds's thoughts than to illustrate a remark by Mr. Russell Fox, F.L.S., in a communication which he made to the Sheffield Pharmaceutical and Chemical Society on "Botanic Science, its Mysteries and Superstitions." Mr. Fox said he was often amused at being asked by a servant-girl for "a penn'orth of dragon's-blood," this product being supposed to bring back love that had cooled. The liquid was put on the fire, and an incantation recited. The actual drawing, nevertheless, has almost a prophetic tone when put beside Mr. Wood's cartoon.



Mr. J. C. Umney (the pianist); Mr. W. F. Wells (the warbler).

A Conference Reminiscence.

When the whirl of the papers is past,
And the voice of the scientist dumb,
  There are times that we long
  For the dance and the song;
And we got it in plenty at Brum.

There was never a thing that we've known,
In the region of presses and stills,
  Or in chemical lore,
  That appealed to us more
Than the singing of Rutherford Hill's.

And this sketch of F. R.'s that we see,
Very graphic the story it tells
  Of the hearts that were warmed
  And the minds that were charmed
By the music of Umney and Wells.

Among the exports from Chiukiang in 1906 were 32,958 cwt of egg albumen and yolk, valued at 39,830*l*., against 12,432 cwt., valued at 16,890*l*. in 1905; of nut and wood oils, etc., 113,145 cwt., valued at 131,029*l*., was exported, against 111,813 cwt., valued at 104,968*l*., in the preceding year.

A Pageant Suggestion.—The prevalence of the pageant craze has inspired the writer of the "Sub Rosa" column in the "Morning Leader" to a series of "spoof" suggestions for various other towns. One of the funniest is the suggestion for a series of tableaux for Widnes, which, he says, "should be peculiarly pungent" and "take us back to the essence of things." The episodes would be arranged as follow:

I.—Otto of Roses first manufactured at Widnes.

II.—Baron Randall of Old Drurie sings "It ain't all lavender."

III. Hugo de Widnes discovers chloride of lime.

IV.—Great joust between Sir Watteau de Nyffe, the Lancashire champion, and Lord Eau de Cologne. Sir Watteau, the victor, is granted the right to bear the three smelts, niffy, on his shield.

V.—Processional chant of perfumers, dustmen, and essence-peddlers. Air: "What though the spicy breezes."

This is the kind of thing that ingenious chemists might develop.

BRITISH PHARMACEUTICAL CONFERENCE MANCHESTER MEETING, 1907.

THE trains which arrived in Manchester after mid-day on Monday brought visitors to the Conference from north, south, east, and west. The favourite trains from London were those leaving town about noon on the Midland and London and North Western Railways. The Irish contingent had rather a bad crossing, the Irish Channel being wrapped in fog, and the steamers of necessity lost much time on the voyage. The railway company, however, made special arrangements for promptly dealing with the belated passengers. When the London train reached the Central Station at Manchester the arrivals found themselves faced by a camera manipulated by the energetic Mr. Cleworth. "That's The Chemist and Druggist photographer," several exclaimed, as they pulled themselves together to put their best smiles on. The dinner at the Midland Hotel on Monday night was well patronised by pharmacists, and the arrangements permitted the meal to be enjoyed without haste. Then followed the reception in the Town Hall by the Lord Mayor and Lady Mayoress. The awning across the pavement told the Mancunians that something unusual was afoot, and a good crowd watched the arrivals at the magnificent hall where all the municipal business is transacted. The building is exceedingly handsome, but the pictorial effect is marred, as it is with most of the local buildings, by the all-pervading covering of soot yielded by the smoke-laden atmosphere. Just inside the entrance—in the places of honour—are statues of Dalton and Joule; the one on the left and the other on the right. Manchester delights to honour her great men, and it is particularly interesting to chemists that two of the greatest of these are scientists. Some twelve hundred invitations had been sent out by the Lord Mayor and Lady Mayoress, and on Monday night eight hundred people arrived at the Town Hall. "Court dress, academical robes, uniform, or evening dress," to quote the invitation-ticket, were all represented, the splashes of colour given by the robes and uniforms being augmented by the tints of the ladies' dresses. The Conference visitors from afar and local chemists were there in force. Alderman Gibson was busy renewing acquaintance with old friends, and Mr. Idris, the M.P. for pharmacy, had snatched a few hours' respite from attendance at Westminster to perform a duty which gives him so much pleasure. The Court dress of the Greek and Persian Ambassador was a gem of gold lace and velvet, which everyone admired. The Lord Mayor and Lady Mayoress, with Mr. and Mrs. Thomas Tyrer on their right, standing in a bower of ferns, palms, and coloured electric-lights, received the guests, who thereupon wandered to

The Lord Mayor and Lady Mayoress of Manchester,
Councillor John Harrop and Mrs. Harrop.

the Great Hall, where the Manchester City Police Band played a fine selection of music. The organ at the far end of the room was screened by palms and other greenery, and stretched across was a network of coloured electric lights, whilst over the key-board was a whirling device in coloured lamps calculated to make the staidest person giddy. In the Council Chamber there was a concert of a high order, where Mr. Fowler Burton sang and Miss Ada Ward, L.L.A., recited. Two committee-rooms were set apart for smoking, and refreshments were served all the evening in the State-rooms, to the music of another band. During the evening a selection was also given on the fine organ by Dr. Pyne. At ten o'clock the National Anthem gave the signal for the guests to return to their hotels, but not to bed, for the octagon lounge was peopled by chemists and their ladies till past midnight, and in other parts of the hotel secret committees met to arrange the following day's programme.

[*Photo. Cleworth.*

Manchester Town Hall.

The Sessions of the Conference.

On Tuesday morning the sun shone in a manner which seemed strange to a city so long unaccustomed to his warming smiles, and, with short periods of gloom, the weather remained fine the whole day. As the sittings of the Conference were to begin at the early hour of 9.30, the visitors were early astir, but with a promptly served breakfast there was plenty of time to get to the meeting-place. The Midland Hall, where the Conference was held, is part of the hotel, and is approached either from the street or from the hotel. It is a large carpeted room with gallery round, and the stage is often used for the performances of dramatic companies. The table for the President was placed on a slightly raised platform in front of the orchestra, and in front and on both sides there were banked up flowers and ferns. The President (Mr. Thomas Tyrer) looked fresh and smart with a carnation in his buttonhole. The Lord Mayor of Manchester and the Mayor of Salford were punctual, and there was no delay in beginning the proceedings. On the right of the President sat the Lord Mayor, Mr. T. H. W. Idris, M.P., Dr. Walsh, Dr. Symes, Mr. E. S. Peck, and Mr. E. White, whilst on the left were the Mayor of Salford, Mr. G. C. Druce, Mr. W. A. H. Naylor, Mr. F. Ransom, Mr. J. C. Umney, Mr. J. R. Young, and Mr. Lunan. There were about 200 ladies and gentlemen present.

Welcome by the Lord Mayor.

The President called for order and said: Ladies and Gentlemen,—We have with us the Lord Mayor of Manchester, and also the Mayor of Salford—my old friend Mr. Frankenburg. I will ask these gentlemen kindly to say a few words. (Cheers.)

The Lord Mayor of Manchester (Mr. Councillor Harrop), who rose amidst cheers, said: Mr. President, ladies and gentlemen,—It is my great pleasure this morning, on behalf of the city, to welcome the Pharmaceutical Association to Manchester. I am reminded that twenty years ago the Association visited Manchester; and I am sure, if you fulfil the programme of this visit—a copy of which I have received—you will be not less fully employed during this week than you were then. (Hear, hear.) You will, I am sure, note the growth which has taken place in our city in the period which has intervened since your last visit. During the last few years we have incorporated a number of the out-townships, and we have also, since you were here, opened a grand waterway from Manchester to the sea. (Cheers.) I see from the programme that you propose visiting the Ship Canal; I am sure it will be a visit that will give you pleasure. A gentleman who came from Dundee told me the other day that the Manchester Canal was one of the wonders of the world. (Hear, hear.) And so it is. When I tell you that in thirteen years Manchester, out of twenty-one ports in Great Britain, stands the fifth—(cheers)—you will pardon me if I feel some little pride in mentioning that fact. (Hear, hear.) I observe also that you propose visiting some of our municipal departments—the Art Gallery, the electricity works, the new fire station, the tramways, the public libraries, and the Town Hall. On behalf of the committees who control those departments I offer you a hearty welcome. (Cheers.) Nothing will be wanting on their part, I am sure, to give you all facilities, and to render your visit enjoyable. With regard to the work of your Society, I confess that I am entirely—what shall I say?—unaccustomed to speak; I have very little knowledge of it indeed; but when I find an Association with 1,200 members in the United Kingdom, and 120 others outside Great Britain, organised to carry out objects interesting to all engaged in the practice of pharmacy, and, amongst other things, to maintain uncompromisingly the principle of purity in medicine, I cannot but wish you the fullest success. (Cheers.) I was struck the other day in reading in a newspaper that that distinguished surgeon, Sir Frederick Treves, was reported to have said that medicine would be largely dispensed with. He himself preferred "surgery and kitchen medicine." (Laughter.) Should not your Society take to heart that suggestion of Sir Frederick? It seems to me that, if it were to prevail, pharmacists would have to turn their attention to some other profession. (Laughter.) And you may find it desirable even to learn something about cotton spinning. (Laughter.) Now let me say, in closing, that I hope your visit to Manchester will be both pleasant and beneficial. (Hear, hear.) I wish your

The Midland Hotel, Manchester,
Headquarters of the Conference.

Conference every success, and trust that you will be able to carry out your programme fully and have an enjoyable time. (Cheers.)

Welcome by the Mayor of Salford.

The **Mayor of Salford**, who rose amidst cheers, said: Mr. President, ladies and gentlemen,—I most heartily join my colleague, the Lord Mayor of Manchester, in offering you a hearty welcome to this city and to Salford. (Hear, hear.) It is a double pleasure for me to be here to-day, because my good friend on my right (Mr. Tyrer) is your President. I have had the pleasure of knowing him for something like a quarter of a century; I have often met him in connection with the Society of Chemical Industry, of which he was President some time ago; and I know that he has done some wonderful work, and must be doing some in connection with your Society also. (Hear, hear.) To-day the Lord Mayor welcomes you to Manchester; to-morrow I hope to have the great pleasure of welcoming you to the borough of Salford. (Cheers.) I admit at once that we cannot show you so many wonderful things—so many stately buildings and fine institutions—as Manchester can boast of; but we shall be able to show you one of the most beautiful of parks, and congregate there, I hope, some of the most beautiful ladies in Manchester and Salford. (Cheers and laughter.) I will conclude by expressing the hope that the result of your deliberations will be for the benefit of science and of humanity at large. (Cheers.)

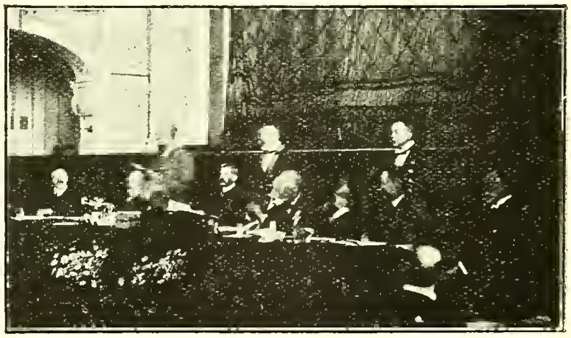
The **President**: My Lord Mayor, Mr. Mayor, ladies and gentlemen,—We cannot too highly value, as a Conference, representing an important association, the compliments which are paid to us year by year by the heads of municipalities. It is a difficult thing in the great Metropolis to get the representatives of the City to do for us what is done in the provinces. I have not found it upon record that the Lord Mayor of London has received the Conference. That is a compliment, or an honour, in store for us some day. But it would be impossible, I venture to say, for the Lord Mayor of London himself to have exceeded the gracious, kindly hospitality which has been extended to us by our good friends the Lord Mayor of Manchester and the Mayor of Salford. Reference has been made by my friend the Mayor of Salford to his acquaintance with me over many years. During that period it has been my pleasure to have met him at the Society of Chemical Industry, and, for a considerable number of years also, at meetings of the British Pharmaceutical Conference. Having had experience of many such gatherings, I was never more gratified than last night at the Manchester Town Hall both with the heartiness of the hospitality and the brilliance of the scene. (Hear, hear.) In saying that I am sure I re-echo the sentiments of all members of the Pharmaceutical Conference. I do heartily, and without the shadow of a shade of insincerity, thank the Lord Mayor, on behalf of the Conference, for the gracious cordiality of his reception. (Cheers.) After what my friend the Mayor of Salford has said, we shall all look forward to the gathering in that beautiful park he has told us of—and to the presence of the ladies in particular—if only "the clerk of the weather" will be kind to us. (Laughter and cheers.) Not the least charm about the Pharmaceutical Conference is the presence of ladies. (Hear, hear.) They add immensely to the pleasure of our meetings, and I for one look with pleasurable anticipation to the Mayor of Salford's garden party. Once more, my Lord Mayor, I express to you all our thanks, and assure you that we feel the compliment of your presence and hospitality very much indeed. (Cheers.)

The **Lord Mayor**: It is very kind of you, Mr. President, to make mention of the proceedings last night in such kindly terms. I only did what any gentleman holding my position would have done; and if you were pleased, I was doubly pleased, for I felt persuaded that you could not have had a more pleasant evening. (Hear, hear.) It was a pleasure to me to welcome you. (Cheers.)

The **Mayor of Salford** added a few words, endorsing the remarks of the Lord Mayor; and both gentlemen afterwards left the Conference, the members rising and giving them a hearty cheer.

Welcome by Local Pharmacists.

Mr. **G. S. Woolley** then rose and said: Mr. President, ladies and gentlemen,—I have the honour and also the very great pleasure, on behalf of the pharmacists of this city and of the Royal Borough of Salford and its surrounding districts, to offer you a very hearty welcome on the occasion of your second visit to Manchester, and I can assure you that no effort on our part will be wanting to render your visit an interesting one. I very much wish that I could have included in this welcome our very good friend Mr. Atkins, of Salisbury. Mr. Atkins, as you will remember, was our honoured President twenty years ago. He has during a long life rendered very great services to pharmacy, and we should have been very glad to have seen him here. Since the Conference last met here there have been—necessarily so, during a period of twenty years—great changes. There have been changes in the *personnel* of the Pharmaceutical Conference. Many valued members have left our ranks—unfortunately too many to be enumerated here—but there are two names to be mentioned of local men whose memory I always like to keep green—namely, William Scott Brown and Frederick Baden Benger. (Hear, hear.) You will remember that twenty years ago Mr. Brown was in delicate health, and shortly after our Conference—or at any rate not very long after—he passed away. Mr. Brown was our President for a long series of years; he was also upon the Council of the Pharmaceutical Society of Great Britain, and was a sincere friend of pharmacists, not only locally, but all over the kingdom, and his death was a loss both to our local Association and to pharmacy in general. (Hear, hear.) Mr. Baden Benger was the Secretary of our local Association for a number of years, and the indefatigable Local Secretary when you visited us twenty years ago, and the year following he filled the office of President. It is not very long ago since he passed away. We regret his loss exceedingly. (Hear, hear.) Then other changes have taken place in this city and district. The Lord Mayor described them fully. But there are one or two not mentioned by his Lordship that I would like to refer to. The first is the addition that has been made to the University in the shape of that noble building the Whitworth Hall, where, by the kindness of the Vice-Chancellor, you will be received this afternoon. (Cheers.) On the other side of Oxford Road you will see rising up the new building of the Manchester Royal Infirmary, a hospital, we hope, that will be second to none in the kingdom—perhaps not second to any in the world; and that, I believe, in conjunction with the Medical School of the University, will form a school of medicine which will also hold its own in comparison with any other in the world. Then we have the Technical Schools both of Manchester and Salford, and for all interested in literature the Rylands Library, which should not be overlooked. These institutions are all fully described in the handbook which will be given to members of the Conference, "Manchester up to To-day," edited by Mr. C. W. Sutton, M.A. I have read the book with great interest, and commend it to your notice. It will not be of such great interest perhaps to visitors from a distance as to those residing nearer Manchester. I can strongly recommend it to Manchester pharmacists, particularly chapter ii., which treats of commercial and industrial Manchester, and is by the late Mr. Elijah Helm, revised by Mr. Walter Speakman, Secretary to the Manchester



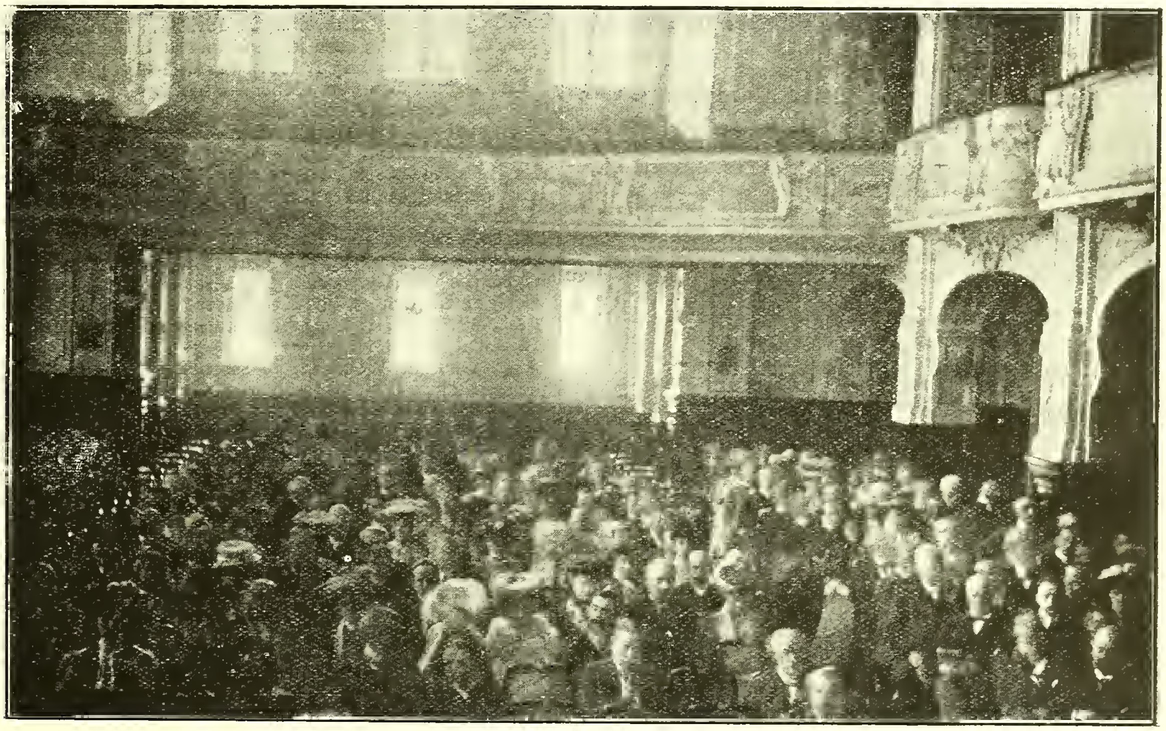
[*Photo. Cleworth.*

The Opening Proceedings: The Lord Mayor Addressing the Meeting.

Names, left to right (sitting): Messrs. Peck, Symes, Walsh, Tyrer, Falkenburg, Druce, Naylor, and Ransom.

Chamber of Commerce. It will give you some idea of what a great centre of industry this is. There is just one other point I wish to refer to—that is, the business of Friday next. The official programme of the Conference concludes on Thursday, but by the kindness of the Executive Committee we are permitted to add another day in order to accept the very kind invitation of Messrs. Crosfield to visit their works at Warrington. (Hear, hear.) Those who want to see what science combined with splendid organisation can accomplish ought not to miss this opportunity. (Cheers.) We have already had a goodly number of names handed in, but we should be glad to see more. I assure you the time will be well spent. Only one remark further—as to the preparations that have been made for your reception. We have had a very large and representative committee at work now for a good many months, and all have worked very loyally and very persistently under the direction, as Secretary, of Mr. William Kirkby. (Cheers.) I should like to say this—that in my time I have worked for one or two organisations on these lines, but I have never come across a Secretary who proved himself such a master of organisation as Mr. Kirkby has done. (Hear, hear.) We all feel greatly indebted to him. Whatever success we have achieved on this occasion, a large proportion is due to the efforts of Mr. Kirkby. (Hear, hear.) Now, in conclusion, I have to offer you a very hearty welcome, and can assure you that it is our earnest desire that this visit of yours should be both interesting and enjoyable. No effort has been wanting to accomplish that end, and I sincerely hope that when the business of the Conference is concluded you will go away with very pleasant recollections of Manchester. (Cheers.)

The President: We are very much obliged to Mr. Woolley for his exposition of the programme, and we all must recognise that the organisation of this Conference has been an immense labour. (Hear, hear.)



View from the Stage. [*Photo, Cleworth.*
Listening to the Presidential Address.

Absentees.

The Secretary then read letters from a number of gentlemen who were unavoidably absent. Dr. John Attfield wrote:

> I am sorry to be absent from the meeting of the Executive and from the B.P. Conference itself at Manchester. This horrid neuritis quite prevents me walking properly, or speaking distinctly. Besides, I do not sleep well. I am much disappointed.

Mr. S. R. Atkins wrote:

> May I ask you as a special favour, when announcing at the meeting of the B.P. Conference the list of absentees, not to overlook my name? It is a matter of sincere regret to myself that I am unable to attend the meetings this year at Manchester.
>
> I am indebted to the Conference of 1887 for many interesting results. I saw Manchester under exceptionally favourable circumstances. The Exhibition of Art and Industry was remarkable, and so was the crowd which gathered to the sight. The attendance at the Conference was a record one; the papers read, and the discussions on them, of much practical value.
>
> I shared with my friend, the late Mr. Schacht, of Clifton, the generous hospitality of my excellent friend Mr. G. S. Woolley, who, I am glad to know, still serves with marked ability the cause of pharmaceutical progress in Manchester.

Letters or telegrams expressing regret at their inability to be present at the Conference were also read from Mr. David B. Dott, Musselburgh; Mr. Lloyd Howard, Bow; Mr. G. T. W. Newsholme, Sheffield; Mr. C. Thompson, Birmingham; Mr. John Harrison, Sunderland; Mr. Peter MacEwan, London; Mr. F. C. J. Bird, London; Mr. A. W. Gerrard, Wimbledon; and Mr. W. G. Cross, Shrewsbury.

The President's Address.

The President began his address at 10.5, and both interested and astonished his audience by the instructive way in which he had treated the subject. Here and there parts of the speech were emphasised in Mr. Tyrer's characteristic manner, the peroration from Mr. Atkins' 1887 speech being especially forcibly given. The address, which is given on page 143, lasted till 11.20, and after the applause which it excited had subsided,

Mr. J. R. Young, President of the Pharmaceutical Society of Great Britain, rose to propose a vote of thanks. He briefly referred to the appreciative and grateful mood of the audience, and said that, thankful as they were for what Mr. Tyrer had given them, they were also thankful for what he had not given them. (Laughter.) The address teemed with original points, and was full of ideas.

Mr. LUNAN, Edinburgh, seconded, and

Dr. J. A. WALSH, President of the Pharmaceutical Society of Ireland, added his testimony of the genuine pleasure that the truly wonderful address had given him. It was critical and analytical, showing the well-stored mind of the President. A friend told him (the speaker) that it was the best day's work the Executive had ever done when they elected Mr. Tyrer to the Presidency.

Dr. CHAS. SYMES, Liverpool, as senior Vice-President, also spoke, remarking on the large field of knowledge covered by Mr. Tyrer. It was exceedingly interesting to hear the definitions of research of men of vast experience; epitomised, these definitions of research might be stated as "scientific search after truth."

The PRESIDENT expressed himself as much obliged for the pleasant things which had been said, accompanied by very gentle criticism. He thanked the audience for their kind appreciation, and hoped they would not find him "intoxicated with the exuberance of his own verbosity."

It was now 11.35, and the ladies withdrew for excursions in the city.

Report of the Executive Committee.

Mr. PECK read this report, which stated that there had been several meetings of the Executive during the year, at which many matters of interest had been discussed and much important business transacted. At the last annual meeting it was agreed by a large majority that the subscription be increased to 10*s.* 6*d.*, and that this should be considered by the Executive. The matter was carefully thought out in committee, and it was decided that the notice *re* subscriptions be redrafted, and the request for subscriptions be "a minimum of 7*s.* 6*d.*, but as that sum was insufficient to meet current expenses, the Executive Committee strongly urge upon members a voluntary subscription of a larger amount." The local corresponding secretaries throughout the country have been communicated with during the year, and the committee thank them for their sustained interest. On November 22, 1906, a special meeting of the Executive considered the advisability of affording facilities at the meetings of the Conference for the discussion of ethical and political subjects so far as they relate to the practice of pharmacy. It was decided to adhere, however, to the present plan of limiting the subjects for papers to those dealing only with science as applied to pharmacy. The Executive direct attention of members to the Research List, which contains many problems awaiting solution, and urge that more effort be made to work them out. They also remind members that a considerable sum of money is available as grants to those undertaking research work. There is no longer a deficit upon the General Index Fund, and members who have not acquired copies of the volume should do so without delay. The Executive thank the various cities and towns which year by year invite the Conference, and entertain the members so well, but as the main reason of the Conference meeting is scientific, they sincerely hope that the smaller towns who would be unable to provide entertainment on an equal scale will not upon that account be deterred from issuing invitations. Since the last annual meeting 64 candidates have been elected to membership, 20 have resigned and 9 died. Among the latter we wish to mention the name of Harold Wilson, who was at one time a member of the Executive. Mr. J. C. Braithwaite has again been appointed editor of the "Year Book," and reports that the MS. of the new volume is well in hand. There are over twenty papers to be read, showing that the interest in the Conference meetings is well maintained. The committee learned with great satisfaction that the biennial award of the Hanbury gold medal has this year been made to David Hooper, F.I.C., F.C.S. It gratefully recalls the valuable services he rendered the Conference during the years he acted as the hon. colonial secretary for Madras, and the many useful papers contributed by him to its annual meeting.

Mr. G. CLARIDGE DRUCE (Oxford) briefly moved the adoption of the report, which he characterised as a model of brevity and lucidity.

Mr. W. GILES (Aberdeen) seconded, saying the report showed that a great amount of work had been very well done by the Executive. The report spoke well for the life of the Conference, of which, in his opinion, every pharmacist should be a member. ("Hear, hear," and applause.)

The report was adopted.

The PRESIDENT then called upon Mr. J. C. Umney (the Treasurer) for

The Financial Statement.

This statement showed, on the debtor side, cash in hand and at bank, 95*l.* 18*s.* 1*d.*; members' subscriptions, 350*l.* 8*s.*; amount received for "Index," 1*l.* 13*s.*; Birmingham balance, 13*l.* 1*s.*; sales of "Year-book," advertisements in "Year-book," and sale of "Formulary," 91*l.* 15*s.* 6*d.*; liabilities on open accounts, 40*l.* 14*s.*; Bell and Hills Fund, 24*l.* 6*s.* 2*d.* On the credit side, Bell and Hill's Fund (last year), 25*l.* 1*s.* 7*d.*; "Year-book" expenses, 182*l.* 5*s.* 11*d.*; editor's salary, 75*l.*; publisher's commission, 2*s.*; sundries, 80*l.* 13*s.* 2*d.*; printing and stationery, 6*l.* 18*s.* 1*d.*; petty cash, etc., 9*l.* 10*s.* 5*d.*; liabilities of last year, 207*l.* 7*s.* 5*d.*; cash in hand and at bank, 30*l.* 17*s.* 2*d.* The net deficit on July 1, 1907, was 9*l.* 16*s.* 10*d.*

Mr. UMNEY said that economies had been effected during the year, and there had been an increase in subscriptions. The report was a gratifying one inasmuch as while at the end of the last financial year the liabilities were about 207*l.*, today the adverse balance is only some 9*l.* There had been a very considerable accession to the membership of the Conference, and this was in a way a reply to those critics who had been of opinion that the interest in the "Year-book" would be curtailed by any change in its production. He hoped the members would think the Executive had acted wisely in the matter. ("Hear, hear," and applause.)

Mr. W. F. WELLS (Dublin) moved the adoption of the statement, and

Mr. GEO. S. WOOLLEY, in seconding, said he was surprised that so comparatively few pharmacists are members of the Conference. The "Year-book" alone, in his opinion, is well worth the value of the subscription.

Bell and Hills Fund.

The statement in connection with this Fund shows that the balance from last year was 25*l.* 1*s.* 7*d.*; this, with 8*l.* 11*s.*, one year's dividend on Consols, makes a total of 33*l.* 12*s.* 7*d.* From that, 9*l.* 6*s.* 5*d.* is deducted for Kimpton's account for books, leaving a net balance of 24*l.* 6*s.* 2*d.* The assets are in account with the British Pharmaceutical Conference, 360*l.* 2½ per cent. Consolidated Stock.

The balance at the disposal of the B.P.C. Research Fund is 38*l.* 5*s.*

The reports were adopted.

THE PAPERS.

The reading of papers and discussion thereon began at 11.47. The first paper was on

The Chloroforms of Aconite and Belladonna.

By R. WRIGHT, F.C.S., Pharmaceutical Chemist.

The author communicated a paper on these preparations to the Conference in Bristol in 1903, showing that a preparation made either by direct percolation of the powdered root with chloroform, or by the B.P.C. Formulary method, contained only a small fraction of the available alkaloids, and that by varying the conditions and working with mixtures of chloroform and absolute alcohol much better results can be obtained. The process finally recommended consisted in percolating the finely powdered root, previously moistened with a menstruum consisting of seven volumes of chloroform and one volume of ammoniated absolute alcohol, and firmly packed in a conical percolator, until a 1 in 1 percolate had been obtained. This takes from belladonna 60 to 70 per cent. of the available alkaloid, and from aconite 70 to 80 per cent., or even more. There was considerable waste of chloroform in damping and packing of the powder; and the author has modified the formula for the "Codex" to be published by the Pharmaceutical Society (G.B.) as follows :—

Aconite or belladonna root, in No. 60 powder	100.00
Solution of ammonia	25.00
Absolute acohol, Chloroform	Of each a sufficient quantity

Moisten the powder with the solution of ammonia and set aside for twenty-four hours. Transfer to a percolator and percolate with a menstruum consisting of one of absolute ammonia to seven of chloroform until 100 of percolate is obtained.

Considerable difficulty was experienced in working any of the ordinary shaking-out processes for determining alkaloids in chloroform of belladonna, but the best results were obtained with the following modification :—

Introduce 20 mils* into a clean dry bottle fitted with a good cork, add 1 mil glacial acetic acid and mix, then add 20 mils distilled water. Shake, gently withdraw the cork, then place the bottle in water at 70° C. to 80° C. and allow to stand until separation is complete. Transfer to a separator, draw off the chloroformic layer and filter the acid solution through a plug of cotton-wool into a second separator. Repeat the washing of the chloroform twice more, using for the second and third operations 0.5 mil glacial acetic acid with 20 mils distilled water, and transferring each of the separated acid solutions to the filter. Reject the exhausted chloroform, and to the mixed acid liquors add T.S. potassium carbonate until the liquid is distinctly alkaline to litmus paper, then extract the alkaloids with 10+5+5 mils chloroform. Bulk the latter solutions and shake out with a mixture of 5 mils diluted sulphuric acid, B.P., and 25 mils distilled water applied in three equal and successive portions. To the mixed acid alkaloidal solutions add a slight excess of ammonia and shake out the alkaloids with 10+5+5 mils chloroform. Draw off the fractions of chloroform into a tarred platinum dish, allow the chloroform to evaporate, and dry the alkaloids by exposure over a water-bath until the weight is constant.

The gravimetric results are checked by titration, but if the alkaloid is colourless the gravimetric and volumetric figures will closely correspond. The two competing processes were tried side by side on two commercial samples of belladonna root, and the products assayed by the process outlined above. The following figures indicate the proportion of alkaloids in grams contained in 100 mils of the preparation :—

No.	Wright's Process.	Ph.Soc. "Codex" Process.
1	0.115	0.268
2	0.177	0.402

A second fraction of percolate was found to contain only 0.004 per w/v of alkaloid so exhaustion of the drug is practically complete by a first fraction.

The analytical process employed for chloroform of belladonna was found unsuitable for use in the case of aconite, and was, therefore, varied as follows :—

Ten mils of the sample was evaporated to dryness in a dish over a water-bath, the residue taken up with 2 mils 5 per cent. potassium hydroxide and 10 mils distilled water and transferred to a separator, the dish being rinsed with a little more water, and the rinsing run into the separator. Five mils dilute sulphuric acid, B.P., was added and the mixture shaken up with 10+5+5 mils chloroform in turn. The latter was drawn off into a second separator and washed with a little acidulated water, the washings separated and added to the contents of the first separator. A very slight excess of ammonia was added, and the alkaloids extracted with 10+5+5 mils chloroform. From the mixed chloroformic solutions the alkaloids were shaken out with a mixture of 5 mils diluted sulphuric acid B.P. and 25 mils distilled water used in three portions. The acid solutions were drawn off in turn, mixed, an excess of ammonia added, and alkaloids extracted as before. This process of purification is repeated if necessary, until the acid solution is colourless, when the alkaloids are finally shaken out with chloroform, the latter distilled off, and the alkaloids dried over a water-bath, the weight being taken when constant.

Two samples gave the following amount of alkaloids in grams contained in 100 mils of the preparation :—

No.	Wright's Process.	"Codex" Process.
1	0.158	0.405
2	0.330	0.355

A second fraction of percolate, equal in volume to the first, showed alkaloids Wright's process 0.022; "Codex" process 0.020 gram per 100 mils. The results obtained prove without any doubt the superiority of the "Codex" process, whether applied to aconite or belladonna root. It takes out practically all the alkaloids quickly and with very little waste of menstruum.

Discussion.

Mr. Naylor said that a good many years ago this question formed the subject of a research which was communicated to the Conference. It was then shown that chloroform is an imperfect solvent under the conditions under which it was employed. Mr. Wright now shows that if alcohol is introduced the extraction of the alkaloids is much facilitated; whether the preparation is entitled to be called a chloroform is another matter. He asked whether the preparation made from different varieties and consignments of belladonna-root varies in colour, and whether the new formula results in more colouring matter being extracted than formerly. This is a point of much importance to the dispensing chemist. The part the alcohol plays is not simply that it acts as a solvent, but rather that it renders the chloroform penetratable. The author seems to have reached the point of the minimum amount of absolute alcohol to chloroform.

Dr. J. C. McWalter said that he had in a humble way investigated the therapeutic activity of chloroforms of belladonna and aconite. The author's paper made him (the speaker) rather pleased with the result. It must be remembered that these preparations are used externally for the relief or pain, which the general public think is the chief function of the doctor and chemist. He had been attracted some years ago by Squire's statement that instead of using alcohol for exhausting belladonna-root chloroform might be used. In this way the double therapeutic action of chloroform and belladonna as pain-relievers would be obtained. He (Dr. McWalter) tried the chloroform of belladonna and was astonished to find that not only was the preparation not stronger, but it was not equal to either plain chloroform or belladonna liniment used singly. It was the same with chloroform of aconite. He gave it up as a bad job, and now saw that the defect was due to the non-extraction of the alkaloids by the chloroform. The paper is a valuable contribution to practical medicine.

Mr. F. A. Alcock (Birmingham) said that there appeared to be a less amount of alkaloid when water is not used, and he would like to know if the alkaloid is the same in both instances. The text-books say that there is no free atropine in belladonna, but that it is formed during the process. Light-coloured preparations are a disadvantage, and he related an instance where the addition of a little burnt sugar made a previously-rejected sample acceptable. Belladonna liniment was interesting to pharmacists, as it was this liniment in which methylated spirit was first allowed to be used. A Government official complained to Mr. Squire of the cost of the liniment used for lumbago, and Mr. Squire suggested that it would be cheaper if the chemist might use methylated spirit. The permission was soon obtained. As a teacher of pharmacy, and in no carping spirit, he pointed out that there was no necessity to require small quantities of glacial acetic acid to be mixed with water when weaker acids were already available and could be more easily measured. Then, again, to mix absolute alcohol with water was wasteful on account of the enhanced cost of the anhydrous spirit. Methylated spirit should also be employed in assay processes wherever possible.

Mr. Quant (Torquay) suggested the use of liquid extract of belladonna in making an extemporaneous chloroform of belladonna.

Mr. Lenton (Long Melford) thought it most important to standardise the preparation.

Mr. Dolbear (Oxford) said chloroform of aconite is never prescribed, but the belladonna preparation is in regular use.

Mr. White said that in hospital practice mixtures of chloroform and belladonna liniment were employed instead of the chloroform of belladonna.

Mr. Kemp asked that speakers would raise their voices, and much amusement was caused when someone called out "Speak up."

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* The term "mil" is used by the author in place of cubic centimetre or c.c.

Mr. Wright, in reply, said the prime object of chloroform is to relieve pain, and the preparation must be volatile so that it could be used as a pigment, active, and miscible with oils. Squire was correct in his idea of combining the properties of chloroform and belladonna, but unfortunately the percolate did not represent either belladonna or aconite. He (the speaker) set himself to make a preparation which would represent the activity of the drug. The hydrolysing effect of water does not come into play in the original preparation, as water is absent. He employed chloroform and ammoniated absolute alcohol with the object of avoiding the use of water. He had succeeded in getting a preparation that is volatile and mixes with oils such as lin.-camph. without separation. In regard to Mr. Naylor's question, the colour would necessarily vary. The alkaloid does not exist in the free condition. This was shown some years ago in the case of the juices where the alkaloid is left in the leaves after the juice is expressed. Mr. Alcock's criticism he regarded as academic; it is easy to keep the acid diluted for use. Liquid extract of belladonna could not be used on account of its immiscibility with chloroform. The same objection applies to belladonna liniment unless the chloroform is in a very small proportion. He considered the problem to be now quite worked out.

A vote of thanks having been given, the next paper was taken.

What is Oil of Juniper?

By John C. Umney, F.C.S., and C. T. Bennett, B.Sc.

There appears to be as much difference between the juniper oil distilled on the Continent, principally in Hungary, from the freshly picked berries (possibly not entirely free from leaves and twigs) and the oil distilled in England from the partially dried berries, as there is between patent still whisky and pot still malt whisky. There is also doubt as to whether the properties of juniper oil are due to the terpene constituents more largely present in imported oil distilled in Hungary, or to the heavy constituent, cadinene, which one finds in the greater proportion in the English distilled oils, and which so modifies the physical characters of the oil. Briefly, the characters of these two classes of oils may be set out as under :

	English	Foreign
Specific gravity	0.870 to 0.900	0.860 to 0.880
Optical rotation	–10° to 1°	–3° to –12°
Refractive index	1.4820 to 1.4880	1.4770 to 1.4830

Fractionation.

		English		Foreign	
		New	Old	Hungarian	German
Below	160°	14	14	22	31 per cent.
,,	165°	40	—	49	— per cent.
,,	170°	52	—	60	— per cent.
,,	175°	60	—	70	— per cent.
,,	180°	65	44	72	45 per cent.
,,	185°	68	—	74	— per cent.
,,	200°	75	—	85	— per cent.
,,	210°	—	54	—	62 per cent.
,,	265°	—	76	—	74 per cent.

The fractionation figures are from type samples, and it is seen that the variation in their composition is very considerable. This must be due to a very great difference in the characters of the oils, and if the medicinal value of the oil be due to one constituent then the medicinal value of the two classes must be widely different. What, therefore, should be sold as juniper oil for medicinal purposes?

The oil distilled in Britain was alone official in the 1885 Pharmacopœia, but the characters and tests of the British Pharmacopœia, 1898, are very broad indeed. Oils of both classes might easily fall within the B.P. limits for specific gravity, and, if freshly distilled, fulfil the requirement as to solubility, and yet the proportion of pinene would probably vary from 30 to 65 per cent., according as the specific gravity was at one extreme or the other. With these premises, therefore, it must obviously be very difficult to say what is juniper oil, and it is certainly necessary that in a subsequent Pharmacopœia some attempt should be made to more clearly define the oil, based, if possible, upon experiments as to the valuable medicinal constituent or constituents of the oil. If pinene be of value, then obviously the light oils which latterly have received such condemnation may be the more valuable. If the heavier fractions have medicinal properties, then it may be desirable that the oil should be distilled from the berries which have become partially dried, or that the imported oil should be fractionated so as to remove from it a considerable proportion of pinene which may be undesirable and possibly inert. In our present knowledge of the position, and until experiments have been conducted on the separated constituents of juniper oil, it would appear that the requirements of the British Pharmacopœia should be fairly broad, and we would suggest as limits into which, in our experience, oils of good quality fall characters and tests somewhat as under :

Specific gravity at 15° C. ... 0.860 to 0.885
Optical rotation in 100 mm. tube –3° to –12°

Fractionation not more than 60 per cent. should distil below 165° C.

Refractive Index.—The refractive index of the oil itself is of little value, but when applied to the higher fractions it is a useful constant. In our experience the residue, after distilling 80 per cent. of the oil, should have a refractive index of at least 1.4900, indicating a normal proportion of sesquiterpene.

Solubility.—The oil should be soluble when freshly distilled in 10 volumes of 90 per cent. alcohol, but the solubility diminishes with age owing to oxidation, the specific gravity increasing accordingly; hence the solubility test alone is of little value in judging the purity of an oil.

It should be noted that the English oil is usually less soluble than the foreign oil, on account of the higher proportion of sesquiterpene. It is perfectly clear that it is difficult in many cases to say definitely whether an oil is a genuine distillate, or whether it has been fractionated to remove the less soluble sesquiterpene; and it is practically impossible to decide from analytical figures to what extent, if any, rectified oil of turpentine has been added to a given sample.

Mr. Umney read a synopsis of this, and Mr. White read the following paper on the same subject :

Oil of Juniper.

By F. C. J. Bird.

Apart from oil of juniper wood (a factitious article), two kinds of oil of juniper berries are on the market, said to be genuine and to conform with the B.P. tests—viz., a foreign oil and an English; the latter commands a higher price than the former, so it is not in such frequent demand. The author referred to the recent Sale of Food and Drugs Acts case (*C. & D.*, July 13, p. 44), and submitted the following analyses of (A) oil distilled in London, and (B) imported Hungarian oil guaranteed to be genuine :

——	A	B	B.P.
Colour	Yellowish	Nearly colourless	Colourless or pale greenish yellow
Specific gravity ...	0.896	0·873	0.865–0.890
Opt. Rot. (100 mm.)	–2.3	–1.6	—
Sol. in 95 % alcohol...	Considerable turbidity	Slight turbidity	Slight turbidity
Refractometer figure at 40° C.	78	63	—
Distillation Test			
155°–160°	12 %	37 %	—
160°–180°	35 %	34 %	—
180°–255°	19 %	10 %	—
255°–280°	22 % Residue	10 % Residue	—

It is hard to believe that these differences can be accounted for by differences in the berries, but the author obtained a sample of the berries from which B was distilled, and on distilling oil from them found that it had sp. gr. 0.872 and refractometer figure 76—a distinct optical difference. He also submitted figures for the distillation from both oils, determined by Zeiss's butyro-refractometer, showing 49 for the first fraction of A and 51 for B, turpentine being 55 and 56, and foreign juniper oils (unfractionated) 58 to 63, while English oil is 76 to 78. He suggested that the difference between English and foreign oils is that the former is the entire distillate from the berries, and the latter the lighter distillate. The higher distillate is more odorous and, as terpeneless oil of juniper, is in great demand in Germany for the manufacture of Hollands. This explanation the author supported by figures for English oil which he distilled into lighter and heavier portions. In concluding, he said that the B.P. characters and tests need revision, especially in regard to sp. gr., which is never less than 0.871 for English oil.

DISCUSSION

Mr. J. **RUTHERFORD HILL** thought the contributions extremely relevant to the main purposes of the Conference, which is to maintain a high standard of purity in drugs. Mr. Umney's paper was an interesting sequel to Mr. Liverseege's contribution to the Conference at Birmingham last year on the analysis of drugs. Several years ago a Scotch pharmacist was summoned for selling salicylic acid containing a certain proportion of cresolic acid. He (Mr. Hill) was called for the defence, and pointed out that there was no standard existent at that time for salicylic acid except the B.P., and that the tests there given were inadequate. On the advice of the Judge the case was withdrawn. He (the speaker) had suggested last year that although the B.P. was *a* standard it was not *the* standard, and that a Commission on Standards should be appointed consisting of public analysts, medical officers of health, and members of the Pharmaceutical Society. He congratulated the Society, and particularly two distinguished members of the Conference, on their appointment upon some such body, and he hoped the committee of experts called in in the juniper oil case recently was merely the beginning of an arrangement which should receive official recognition. With regard to the subject discussed in the papers, he could testify that samples of juniper oil increased in density with age. He had one sample which had been kept in a bottle for forty years. It was of a syrupy consistence, and the fact that the bottle had never been opened seemed to show that density occurred without exposure to the air. He thought a necessity might arise for the laying down of two standards. The light oil might be found to be of greater medicinal value, while the heavy oil might also require to be recognised on account of its value in manufacturing and industrial processes. This might have a general application, as there are many articles in the Pharmacopœia that have a commercial apart from a medicinal value.

Mr. E. T. **BREWIS** confirmed the figures given by Messrs. Umney and Bird with regard to English oil He thought that most of the foreign oil which comes to this country is more in the nature of a by-product rather than an actual distillation of the berries. He (the speaker) had looked up the records of bulks, some sixteen to twenty in number, and found none lower than 0.871 or higher than 0.890. The rotations varied from −4.5° to −11°. He agreed with Mr. Umney except with regard to the limit of gravity, which he considered should be raised. He (the speaker) was of opinion that the heavier oil would be found of more value medicinally. Among foreign oils he had found gravities as low as 0.859 and 0.858.

Mr. W. A. H. **NAYLOR** asked what was the difference between the yield of oil from mature and from immature berries, and if it was not a fact that the mature berries yielded a better oil.

Mr. **ALCOCK** regretted that the smaller adulterations like these should be allowed to proceed to the law-courts, especially in cases such as the one of juniper oil, where the tests were carried out by an instrument that had not received any recognition in the Pharmacopœia or in pharmacy—namely, the oleo-refractometer. It should be a rule that when an article was purchased and examined under new tests the pharmacists should be courteously informed if it failed to come up to these tests, and not dragged into the courts straightway.

Mr. A. **SIMPSON** (Stalybridge) said the subject was one which touched closely the average retail chemist. The only juniper oil in pharmacy which, so far as he knew, had any medicinal reputation was the oil distilled from the wood. This, according to the authors and subsequent speakers, is a spurious oil, but it certainly has a reputation and is what the public wants. He thought he, as a retail pharmacist, was quite justified in continuing to sell it, labelling it "Oil of juniper-wood."

Dr. **MCWALTER** was quite satisfied that the heavy oil distilled in England possesses the best medicinal properties. If new tests are inserted in the Pharmacopœia as suggested the unfortunate pharmacist is liable to prosecution, but if prosecuted and found guilty he should have the right of appeal to a Board of Experts such as had been suggested. The difficulty would probably be that the Board would exact a higher standard than the present Pharmacopœia. but the pharmacist should at least have the option of appeal.

Mr. **UMNEY**, in a brief reply, said the sum of the discussion appeared to be that there was no agreement as to whether the medicinal properties of juniper oil were due to cadinene or to pinene. At the consultation by the experts in the juniper oil case they had the benefit of the advice of Sir Thomas Stevenson, who, when asked the same question, whother the medicinal properties of juniper oil were due to pinene or to cadinene, said he did not know, but that chemists should find out. (Laughter and applause.)

The **PRESIDENT** said hearty thanks was due to the authors of the papers. He (the President) had himself written a monograph on "Purity," which, on re-reading, he decided to be so dangerous that he destroyed it. (Laughter.) With regard to the recent departure as to a consultative board of experts, he thought that was all to the good; but care should be taken that the board be not too large and that it must be thoroughly representative.

At 12.55 the next paper was taken.

Chromic Anhydride and its Solutions.

By T. E. WALLIS, B.Sc. (Lond.), F.I.C., Ph.C.,
Head of the Science Department, Technical Institute,
Tunbridge Wells.

There are well-known processes by which chromic acid can be valued in terms of its oxidising power, but there is no method for determining it acidimetrically. This paper was a report of work done in that direction, some remarks also being made respecting the action of heat upon the anhydride and with reference to the preparation of the official solution. It was pointed out that the intense colour that a solution of chromic acid acquires when standard alkali is added can be avoided by adding barium chloride and sodium acetate, so that the following reaction occurs:

$$BaCl_2 + H_2Cr_2O_4 + 2CH_3.COONa = BaCrO_4 + 2NaCl + 2CH_3.COOH.$$

Titration of the clear liquid with standard alkali, with phenolphthalein as indicator, will furnish the equivalent of chromic acid taken. The presence of sulphuric acid in chromic acid would upset the method; the author found two commercial specimens of chromic anhydride to contain 60.02 and 56.91 per cent. of CrO_3, and 24.85 and 25.39 per cent. of H_2SO_4. The difference between the total acidity estimated as above and the chromic equivalent determined by standard ferrous ammonium sulphate gave the H_2SO_4. B.P. chromic acid also contains sulphuric acid, one specimen obtained by the author from a good drug house showing: CrO_3 90.23, H_2SO_4 3.99, KSO_4 3.85, and H_2O 1.93. Similarly liquor acidi chromici of the pharmacies contains sulphuric acid, and two specimens reported on contained only 18.5 and 19.5 per cent. of CrO_3, instead of the B.P.'s 25 per cent. The second of these specimens was sp. gr. 1.1856, which is the B.P. figure, and this led the author to look into the matter, with the result that he found the B.P. to be wrong. He concluded with the following suggestions in respect to the Pharmacopœia monograph (B.P. p. 9):

1. The residue left after heating the anhydride is greenish-black, not "green," as stated.
2. The aqueous extract of the above residue should be tested for potassium as well as sulphates.
3. To the tests might be added a quantitative one as follows:—

> To 0.1 gram of chromic anhydride add 3 c.c. of solution of barium chloride and 3c.c. of solution of sodium acetate; filter and, using phenol-phthalein as indicator, titrate the filtrate with decinormal solution of sodium hydroxide, of which not less than 19.8 c.c. should be required.

This would indicate a purity of at least 99 per cent.

4. The specific gravity of the official liquor [B.P., p. 176] should be changed from 1.185 to 1.208, and a similar quantitative test added to ensure the presence of 25 per cent. of chromic anhydride.
5. In view of the hygroscopic nature of the anhydride and

the consequent difficulty of keeping it, it might be advisable to introduce a new formula for the liquor, as follows:—

Chromic anhydride	1 oz.
Distilled water	a sufficient quantity

Dissolve the chromic anhydride in sufficient water to give a solution having a specific gravity of 1.208.

Discussion.

Mr. Wright said that was a useful note. He would like to know how the potassium sulphate got into the chromic acid. It is very difficult to keep the acid anhydrous.

Mr. White asked if in testing for sulphuric acid the chromic acid was ever reduced to a chromium salt, as this might keep back small quantities of sulphate. On account of the hygroscopic nature of the substance it would not be advisable to have too rigid figures. The salt sent out 100 per cent. would not be so in three months.

Mr. Alcock said that Redwood used to advise nitric acid for getting rid of the sulphuric acid, the nitric acid being afterwards volatilised.

Mr. Naylor asked how long it is since samples of chromic acid free from sulphate have been on the market. It must be within the last four or five years, as previously no sample was free from sulphuric acid, which was often present to the extent of 15 to 20 per cent.

Mr. Peck remarked on the value of the paper.

Mr. Wallis, in reply, said that the sulphuric acid results from imperfect washing of the anhydride made by the 1885 B.P. process. When he recommended a 99 per cent. acid he did not contemplate that it would be kept for a long time, but rather that the pharmacist would buy it in good condition and convert it into liquor.

Mr. Wallis was thanked for his paper.

At 1.15 Dr. W. H. Martindale gave an abstract of his paper, from which we print selections (see p. 150), entitled

Pharmacy Notes from various Parts of the World.

Dr. Martindale distributed handsomely produced booklets containing the full paper, which were much appreciated. He had also a collection of specimens of the characteristic preparations of the different countries. These were neatly mounted on boards and plainly labelled, the whole being contained in a divided cabinet. The specimens were handed round during the reading of the paper.

The President asked for criticism, but no one rising he said the paper showed that "infinite capacity for taking pains" which characterises genius. He wished there were more young men present, so that they could profit by this example. In regard to labelling and general instructions issued with drugs, they are nowhere better done than in this country.

Dr. Martindale briefly replied. He had known Mr. Tyrer since he (the speaker) was a child, and knew that what he said he meant. It was a sufficient reward to have had his work appreciated.

At 1.45 Mr. Alcock gave brief abstracts of his two papers, viz.,

Preservation of Laboratory Test-solutions.

By F. H. Alcock, F.I.C., F.C.S.

For the preservation of the British Pharmacopœia test solutions of albumen and starch the author recommends with confidence "benzene," *i.e.*, mineral naphtha, which costs him about 2*s.* per gal. Its sp. gr. at 60° F. is 0.8706, and 25 c.c. of it leaves a residue of 15 mgm., and its initial boiling point is 140°, rising gradually to 298° to 300° F., when the greater portion passes over, although in the final stages the temperature rises as high as 300° F. The quantity to be used for the albumen solution is 1 to 2 c.c., but more or less makes very little difference as far as the use in the laboratory is concerned. For 100 c.c. of starch solution 1 c.c. of mineral naphtha is usually quite enough The albumen solution is aspirated through a column of cotton wool or tow to remove the insoluble portion. The mode of action of the preservative is probably the production of an atmosphere in the containing vessel which on the one hand is inimical to or destroys bacterial germs, and on the other hand precludes oxidising action.

Alkali in Drug-Ashes.

By F. H. Alcock, F.I.C., F.C.S.

This had reference to the determination of the amount of alkali. The author had to examine pil. rhei. co. to see how much soap it contained, and worked on the ash basis, but found numerous difficulties, lime cropping up in places where it was not expected. He finally got good results with a modification of a Fresenius method as follows:

> After removal of all basis as far as magnesium in the usual analytical method (at least twenty-four hours is necessary for this), free ammonia is expelled by heat, then liquor plumbi subacetatis is added in slight excess and the mixture filtered, the precipitate being washed. Remove all lead from the filtrate with suphuretted hydrogen; evaporate the filtrate to dryness in presence of the nitric acid (which oxidises sulphur and ammonia salts). Finally treat the residue with dilute sulphuric acid, evaporate and ignite to get rid of carbon and weigh as sulphates.

Discussion.

Mr. Burford said that with regard to the preservation of hyposulphite of soda solution he had found that a small quantity of salicylic acid—a decigram to 1 litre—kept it for five years without change.

The President, in moving a vote of thanks, spoke of the necessity of looking to the freshness of laboratory solutions. He had more than once been able to refute charges of inferiority or low standardisation of chemicals by making inquiries about the complainers' standard solutions. There is a wide field of research for someone in this subject.

At 1.50 the President called for the following paper:

On Cucumis Trigonus (Roxb.) and Colocynthin.

By W. A. H. Naylor and E. J. Chappel.

This paper dealt with the chemical examination of the dried fruits of *Cucumis trigonus*, Roxb. (*C. pseudocolocynthis*, Royle), which Dymock reported to be common in the Bombay Presidency, but not used medicinally. It resembles colocynth, is very bitter, but is sometimes eaten by natives after soaking in salt and water. It is Karél in the vernacular. From 136 grams of the fruit the authors obtained and rejected 96 grams of seeds. The 40 grams of rind and pulp was ground in a coffee-mill and treated by Henke's method ("Archiv der Pharm.," ccxxi. 200-205) for the extraction of colocynthin, the moist mixture of the tannin compound and lead carbonate being, however, treated with animal charcoal and dried. A yellow amorphous body weighing about 3 centigrams was finally obtained, and this being too small for chemical identification, it was compared by colour-tests with purity colocynthin prepared by the authors according to Henke's process in its main outlines. The colour-tests [sulphuric acid, orange colour changing to red; sulphuric acid and a little ammonium vanadate, blood-red colour, and on standing purple with blue at the edges; Froehde's reagent, cherry-red and phenol and sulphuric acid a blood-red colour, changing to orange] showed the two to be either identical or closely related bodies.

The authors also investigated one or two disputed points about colocynthin, especially the chief products of hydrolysis. Walz appears to have been the first to isolate a body from the drug which had a claim to represent the active principle of a degree of purity at that time unattained. He described it as being in yellowish-white crystalline tufts, yielding on hydrolysis a new body colocynthein and glucose. He also isolated a white crystalline principle colocynthetin, soluble in ether and alcohol but insoluble in water. Henke failed to obtain colocynthin in a crystalline form, and questioned the correctness of Walz's statement as to its decomposition. Johannson ("Year-book," 1885, p. 119) stated that colocynthin on hydrolysis gave colocynthein, elaterin, and bryonin. Wagner ("Amer. Journ. Pharm.," 1893, 179) slightly modified Henke's method for the extraction of colocynthin, and records his failure to obtain it in crystals.

The present authors used in their experiments the colocynthin which they isolated by Henke's process as previously referred to, one part of it being purified by precipitating the aqueous solution prior to the addition of tannic acid successively with lead acetate and subacetate and removing excess of lead salt by sulphuretted hydrogen. The product, after washing with ether, was redissolved in absolute alcohol, from which it was obtained by slow evaporation at a low temperature in pale-yellow needles. The original product was amorphous. The samples were hydrolysed separately, similar results being obtained in both cases, viz. :

> The substance was heated for six hours with dilute sulphuric acid (one part to ninety-nine of water) in a vessel connected with a reflux condenser, when it partly fused and changed into a brown resin. From the solution, after standing all night, a small quantity of a yellow amorphous body separated. After filtration the solution was shaken with benzene. The latter was separated and set aside for spontaneous evaporation. The aqueous solution, after neutralising with barium carbonate, was filtered, and this filtrate concentrated to a small bulk, cooled, and refiltered. On heating this product with phenyl-hydrazine hydrochloride and sodium acetate, an orange-yellow precipitate was obtained. It was collected and washed with cold water.
>
> The brown resin was washed with ether, which extracted a yellowish-white substance (nature not ascertained) and some elaterin. The rest of it was exhausted with chloroform; the residue obtained on evaporation was digested with absolute alcohol and animal charcoal, the solution filtered and concentrated to a small bulk, then allowed spontaneously to evaporate. A white crystalline substance was obtained mixed with a yellow body. The white substance gave the reactions of elaterin in a marked manner, but was still impure, and after further purification with ether and chloroform, a product was obtained which gave reactions identical with pure elaterin.
>
> The yellow substance accompanying the resin was too small in amount for detailed investigation.
>
> The benzene solution yielded an amorphous yellow substance, which agreed with colocynthein, but contained a trace of elaterin.
>
> The osazone crystallised from 45-per-cent. alcohol in small orange-yellow needles. When dried at 100° C. it fused and decomposed at about 194° C. There is thus no reason for doubting Walz's statement that the sugar formed is glucose.
>
> A compound probably identical with the colocynthetin of Walz was extracted from the portion of the hydro-alcoholic extract insoluble in water by macerating in ether, digesting with animal charcoal, filtering, and distilling off the ether. The residue was dissolved in absolute alcohol and the solution spontaneously evaporated, when a sticky brown mass was obtained. This yielded to petroleum ether a white crystalline body mixed with some oily matter. The petroleum-ether extract was spread on a porous tile to remove the oily impurities, then dissolved in ether, the solution filtered and allowed to evaporate, and the product finally crystallised by spontaneous evaporation from petroleum ether. A white crystalline body soluble in ether, petroleum ether, and alcohol was thus obtained.

During the work a sample of colocynthin was purchased from a firm of reliable manufacturers. Although it was labelled "Puriss." it differed markedly from the specimens prepared by the authors, being an orange-brown powder, which gave a dirty brownish colour with sulphuric acid and ammonium vanadate, and experiments showed it to contain a considerable proportion of impurity. Reviewing the whole work, the authors say the experiments help to establish the following facts :

> Pseudo-colocynth contains a principle identical with or closely related to colocynthin.
>
> Colocynthin prepared from *Citrullus colocynthis* may be obtained in a crystalline state despite the failures of Henke and Wagner to induce it to assume a crystalline form.
>
> Notwithstanding the doubts cast by Henke upon its decomposition by acids into colocynthein and a sugar, the results confirm those of Johannson that colocynthin is capable of hydrolysis, and yields among other products colocynthein and elaterin, to which they add a sugar.
>
> Colocynth contains a white crystalline body agreeing in its general characters with the colocynthetin of Walz.

Discussion.

Mr. **Finnemore** noted that the colour reaction was given, but no reference was made to the melting-point of colocynthin, which would be an important guide to the purity of the glucoside.

Dr. **McWalter** asked about the therapeutic activity of the substance, and

Mr. **Garnett** desired to know the progress of hydrolysis.

Mr. **Naylor**, in reply, said that the paper was not the final settlement of the question; it only helped to establish certain points which were not clear. He had grave doubts as to the formula for colocynthin; one has been assigned. It would pay someone to devote time to the elucidation of the constitution of colocynthin.

The President, in thanking the authors, reminded the audience that there is a research fund available.

It was now 2.5, and the President complimented the meeting on the progress made. The attendance had been sustained, and with an admonition to be punctual in the morning all went to lunch.

Second Session.

Wednesday was again a fine day, and everybody seemed pleased, although the dance of the previous evening rather retarded attendance at the breakfast-table. It was a little after 9.30 when the President rapped for order, the audience numbering about twenty members.

Delegates.

The President called on Mr. White to read the list of delegates, which was as follows :

Pharmaceutical Society of Great Britain.—The President (Mr. J. R. Young), Vice-President, Messrs. Cross, Gibson, Gifford, Hobbs, and Newsholme. *North British Branch.*—Chairman (Mr. G. Lunan), Vice-Chairman (Mr. J. P. Gilmour), Messrs. Cowie, Currie, Giles, Sutherland, and J. Tocher.

Pharmaceutical Society of Ireland.—President (Dr. Walsh), Vice-President (Mr. J. Smith), Messrs. Beggs, Goldon, Hardy, Wells, and Watson.

Aberdeen Pharmaceutical Association.—Messrs. W. Giles and W. F. Hay.

Bradford Chemists' Association.—Messrs. A. Hanson and Silson.

Bristol Chemists' Association.—Mr. H. E. Boorne.

Cambridge Chemists' Association.—Mr. E. S. Peck.

East Aberdeenshire Chemists' Association.—Mr. J. F. Tocher.

Edinburgh Chemists', Assistants', and Apprentices' Association.—Messrs. Cowie, Duncan, Hill, and Rowland.

Exeter Chemists' Association.—Mr. H. W. Gadd.

Forfarshire Chemists' Association.—Mr. Malcolm Macfarlan.

Leeds Chemists' Association.—Messrs. F. W. Branson, Beacock, Pilkington-Sargeant, Worfolk, and Bentley.

Leicester Chemists' Association.—Mr. Burford.

Liverpool Chemists' Association.—Messrs. A. C. Abraham, Cowley, W. P. Evans, Marsden, Shacklady, Symes, and Wyatt.

London Chemists' Assistants' Association.—Messrs. Arrowsmith and Paterson.

London Chemists' Association.—Messrs. Holding, Idris, and J. C. Umney.

Manchester Pharmaceutical Association.—Messrs. G. S. Woolley, Kemp, Kirkby, Kidd, Pidd, Grier, and Lane.

North-East Lancashire Chemists' Association.—Messrs. Gifford and Hindle.

North Staffordshire Chemists' Association.—Messrs. E. Jones, Bentley, and Cornwall.

Nottingham Chemists' Association.—Messrs. Adamson and Middleton.

Oxford Chemists' Association.—Messrs. Bellamy and Dolbear.

Sheffield Pharmaceutical and Chemical Society.—Messrs. Antcliffe, Carr, Jackson, Squire, Newsholme, Pater, Appleton, and Williams.

Stockport Chemists' Association.—Mr. J. C. Arnfield.

Western Chemists' Association (*London*).—Messrs. Bowen, Cofman, White, and Martindale.

By this time the audience had increased, and reached its normal dimensions.

At 9.45 Professor R. B. Wild read his paper on

Artificial Calamines.

He said the question of colouring ointments and lotions for dermatological practice is an interesting and important one. Skin-diseases are often disfiguring, and any application that is used should diminish that disfiguration without interfering with the general health. For this purpose lotions and ointments now used contain calamine as the chief ingredient for two reasons—because of its curative properties and because it resembles the colour of ordinary skin. But the calamine preparations dispensed at the present day are very variable, not only in colour, but in medical properties. Many calamine lotions he had seen in practice were extremely irritating to the skin. One sample he examined contained a considerable quantity of arsenic with some colouring matter. In other cases the calamines were found to contain barium sulphate and oxide of lead, while in almost all the cases varying amounts of barium sulphate were detected. Professor Wild exhibited a calamine and sulphur preparation which was quite black, as an illustration of the fact that some calamines will not mix with sulphur. Continuing, he said he determined to investigate the question, and in order to do this thoroughly he first endeavoured to ascertain the approximate colour of the skin, then to find out some harmless substance of an appropriate standard of colour. To obtain the standard of colour he employed Lovibond's tintometer, one of which he had on exhibit. Professor Wild explained the method of using the tintometer, saying that his principal difficulty had been experienced in getting the colour of a normal skin, the peculiar satiny lustre on the surface of the skin being difficult to reproduce. This having been overcome, he next proceeded to make powdered artificial calamines of various kinds to then determine their colour values with the aid of the tintometer. In a coloured diagram, which he had on the blackboard, Professor Wild showed graphically the theory of the colour factors employed. Starting with a pure carmine column, each inch of which he took to represent one degree of colour, he blended it with yellow and blue in varying proportions, the length of the lines on his diagram being in the proportion used. His experience was that normal skin is a red with half as much yellow as red and a certain amount of shade, the latter representing the amount of loss of light on the skin. Carmine was obviously unsuitable, as it contained no yellow, so he experimented with iron oxides of various kinds, trying first hydrated ferric oxide, which, however, was too dull. Then he tried ferri peroxid precip. rub, then jeweller's rouge and Armenian bole successively. The two last-named came very nearly to the colour of normal skin when diluted down, and Dr. Wild exhibited samples of calamines he had prepared in two tints—one for a "deep-toned" skin, the other a "pinkish-cream." One sample was made in the proportion of 1 per cent. of jeweller's rouge and 1¼ per cent. of Armenian bole to the base, and the other contained 2½ per cent. jeweller's rouge and 3 per cent. of Armenian bole. Something between these limits would, he said, give a suitable calamine for the majority of cases. With regard to the base he had found precipitated zinc carbonate to be by far the best. He also exhibited other samples, showing that this base would mix perfectly and without change of colour with sulphur or sulphurated potash. In conclusion, Dr. Wild said, "Knowing as I do the great value of the formulas published by the British Pharmaceutical Conference, I thought it would be useful if I put these facts before you, and I would suggest the advisability of including a formula for a standard calamine in the next edition of the Formulary." (Great applause.)

Discussion.

Mr. R. Wright said he had experienced considerable difficulty with calamines, and, after experimenting in various directions, he had succeeded in devising a calamine which approached the normal skin colour. The line he had gone upon, however, was a mixture of browns, but the conclusions reached were practically the same as those of Professor Wild. With regard to the preparation of calamine, he believed a typical method is precipitation in a solution of zinc containing a ferric solution. The difficulty has been to obtain a powder which is sufficiently impalpable for general use. He asked Dr. Wild to what the remedial action of calamine lotions is due. Is it to a specific action upon the skin and terminals, or simply to the fact that the fine powder forms a protective coating? With regard to the sulphur lotion exhibited, the black colour is probably due to the presence of lead as an impurity, as it is extremely difficult to obtain a zinc oxide free from lead.

Mr. Rutherford Hill thought there was a great necessity for a recognised formula for calamine for use in medicine. He had often had his attention called to the fact that calamines contained large quantities of barium sulphate. He commended a process devised by Mr. W. Lyon, of Edinburgh, for the preparation of calamine, the method being precipitation with sodium carbonate of zinc sulphate solution containing a definite proportion of ferric sulphate. In that paper Mr. Lyon suggested that the dried powder be formed into oxide. It was a great benefit to pharmacy to have an investigation placed before them by so eminent a pharmacologist as Dr. Wild, who could look at the matter from the medical as well as the pharmaceutical point of view. (Hear, hear, and applause.)

Mr. Finnemore said in hospital practice he had found the calamines of commerce to be variable mixtures, but a skin physician had informed him that it really did not matter, as the efficacy of calamine is due to its properties as an insoluble powder. He inquired whether Dr. Wild had had any experience in that direction.

Mr. J. C. Umney said wholesale druggists in particular ought to feel extremely grateful to Dr. Wild for the excellent method he had given for the preparation of calamines. All manufacturers had experienced trouble in matching samples of calamine, and it had never occurred to them to use the tintometer. (Applause.)

Mr. T. Maltby Clague congratulated Dr. Wild on his excellent paper, but expressed fear, as a timorous person, that even suppose pharmacists had a standard calamine they did not even then have everything. As illustrative of the difficulty, he told, amid much laughter, an anecdote of a certain class in an Indian college, who surprised their British teacher by stating that a certain solution contained manganese. The astonished professor asked how his students had come to that unanimous and extraordinary decision, when they pointed out that it gave a "skin colour." He (Mr. Clague) suggested therefore that in any monograph on the subject three lines of emphasis under the word "British" should be made when skin was mentioned. Moreover, the pharmacist has not always normal skin to deal with. Occasionally he has to conceal the results of ecchymosis, produced by an unmailed fist, and he suggested that at least three colouring-materials should be employed corresponding to the three primary tints used by the learned professor. This would leave room for the variation in colouring rendered necessary in many cases after consultation between the pharmacist and the patient. (Great laughter and applause.)

Dr. Symes said calamine was rarely prescribed alone in a lotion, and he thought a standard tint should be made fairly dark to allow dilution with the zinc compounds that are often prescribed along with calamine.

Mr. E. White did not think it was possible to get one calamine to suit everybody. No one formula could meet the case, and he suggested that Dr. Wild should continue his investigations on the lines suggested and evolve a formula or set of formulas. Owing to the extreme difficulty of obtaining native calamine he asked whether zinc was really an essential feature in these preparations. Referring to Mr. Lyon's paper Mr. White said his experience showed that the tint varied according to the amount of heat used in drying the precipitate. The mixture as produced by Lyon's method was a very nice preparation, but it was never twice alike. (Laughter.) The powder generally produced, in his experience, was a cinnamon brown.

The President sympathised with Mr. Umney in the troubles he had in the preparation of calamines. He (the President) had made fifteen different varieties as to colour, and at least six as to composition. In every case in which he had ventured to suggest uniformity of colour he had practically been told to mind his own business. In this matter, as in all others, there should be a definite standard. Barium sulphate had been found in 90 per cent. of the samples he had examined, and the tinting of barium sulphate is an extremely difficult operation. With regard to a remark of Dr. Wild's, he would like to say a word upon an extremely delicate subject. Dr. Wild was obviously not aware of the fact that the "Formulary" does not now exist. He would like to say publicly that he did not agree, and that he does not now agree, with the doing away of the "Formulary" of the British Pharmaceutical Conference. But although the "Formulary," to his great regret, does not exist, the spirit of the "Formulary" still exists, as is shown by the list of papers read this year. The secretaries had told him that the list is as fine a one as ever there was, so that the *raison d'être* of the Conference does exist. (Great applause.)

Dr. Wild, replying, said in formulating his skin colour he had avoided fixing a definite standard, but had given two limits between which might be included the majority of skins. Barium salts were much more irritating in practice than zinc salts, and a remark of Mr. Tyrer's about the use of barium salts in paper made him wonder whether its use in paper used for toilet purposes was the reason of subsequent irritation of the skin in certain parts of the body. Zinc and bismuth were, he thought, more than merely protective dusting powders, as decomposition with the acid secretions of the skin took place when these were applied, and they are thus of value as astringents as well as protectives. He thought the question of preparation of formulas for standard calamines would be much better left to the pharmacist. There were many pharmacists in the Conference interested in the subject, to whom the production of adequate formulas could quite safely be left. (Applause.)

At 10.35 the President called for the next paper, which was

Immunity to Disease among Plants.

By Professor Weiss, D.Sc.

This paper was delivered extemporaneously, and evidently interested a large number of those present. The Professor said that plants exhibit different degrees of resistance to disease and climatic conditions. This resistance has a theoretical and practical importance. If the resistance can be increased it may often be turned to commercial advantage. Experiments have been made in the directions of nutrition and pampering. As regards the effect of frost, young plants are more susceptible than mature plants, and all the experiments have been made on the lines of getting the plant to mature quickly so that it can resist the autumn frosts, or retarding the production of foliage to guard against the spring frosts. Manures are used to give these effects, and a good supply of potash salts is found to make plants more resistible against frosts —due to better nourishment, causing the tissues to mature more readily. Methods of cultivation, drainage of the soil, etc., have also been tried, but the best effects have been obtained by selection of frost-resisting varieties. In this way varieties of plants are obtained that can be grown in high latitudes. The Canadian experimental-farms conducted by Dr. Saunders have been used in this investigation. Apples suitable for the cold climates have been produced by crossing with the Siberian crab. Then as regards diseases, these are usually due to vegetable parasites which exhibit an exceedingly selective action, attacking usually only a particular order, genus, or species of plant. Dr. Marshall Ward's experiments on the brown rust of grass showed that this selective action was not due to structural peculiarities, but to the physiological causes—the secretion of substances which prevent the fungus entering the plant. These substances are of the nature of antitoxins, and can be increased, as they are in animals, by the injection of certain toxins or by preventive drugs. This has been tried in France in fruit-culture, with very good results, plants watered with copper-sulphate solution being able to shake off fungoid diseases and resist animal parasites. Experiments with lettuce have, however, given contradictory results, and it is probable that the direction of success is in selection. In this way rust-resisting wheat has been produced; but these disease-resisting varieties are less productive, and recourse has been had to hybridising combined with selection, which yields excellent results. The question is of great importance to a city like Manchester, whose prosperity depends to a large degree upon the regularity of the cotton-crop.

Discussion.

Mr. J. R. Hill said the subject had very interesting practical aspects to pharmacists. It is the common practice to apply powerfully poisonous insecticides to eliminate plant-diseases, but as members of the public, pharmacists frequently ask themselves whether it is to the general advantage that these strong poisons should be used in an extensive and unrestricted way. The pharmacist might be of great service in disseminating information as to how plant-diseases can be avoided.

The President said that, acting on a hint given him by Mr. MacEwan, he obtained from the Board of Agriculture a large batch of leaflets dealing with agricultural difficulties. The pamphlets give in concise, systematic, and simple manner the best that is known on the various plant-diseases, and he recommended chemists to get these publications. In no country in the world can the same amount of knowledge on any subject be obtained as cheaply and quickly as in Great Britain.

Mr. G. C. Druce said that plants cultivated in quantity are always more prone to disease; artificial conditions are set up which lead to trouble. The question has often been raised of introducing quick-growing oaks into this country, but, as an expert recently told him, beware of introducing disease, as was done in the case of the larches planted in Scotland. Mr. Druce said that French agriculturists always have any amount of information placed at their disposal when they apply to their Government.

Dr. Symes, referring to the copper treatment of lettuce and potatoes, asked whether the taste of the vegetable was modified. The destructive action of frost depends upon the time of the year and whether the plant is dormant or active.

Mr. Alcock gave his experience with black-currant bushes. Acting on the advice of Mr. Collinge, of the Birmingham University, he made a bonfire of some infected bushes. One he reserved and dusted throughout the winter with quicklime, with the result that he has this year obtained currants as large as marbles.

Dr. McWalter asked for further information as to whether the poisons used were absorbed by the plant. The Board of Agriculture of Ireland are making violent efforts to do their duty. If a poor farmer sends them a complaint about his plant troubles he gets a pile of pamphlets sent him, which recommend the pouring of tons and tons of copper sulphate and arsenic sulphide over the infected vegetable matter. This treatment seems effective, but may it not be one of the reasons for the large increase in appendicitis. His attention was first called to this matter by a layman, and he has always found that the opinions of intelligent laymen are founded on some substratum of fact. He had tested certain vegetables for arsenic without success, but this may be due to the methods which are unsuitable for use in the case of albuminoids, which are acknowledged to be very difficult to test.

Mr. F. Ransom spoke of the great tendency to disease which many medicinal plants show, particularly hyoscyamus.

Mr. Burford said immunity from disease could be secured by putting the plant in suitable position, and giving suitable food.

Mr. Chapman (Donegal), in an amusing speech, said it was a mistake to place large quantities of poisons at the disposal of ignorant farmers, who do not appreciate the conditions. Grocers sell copper sulphate largely because, being keen buyers, they can distribute it cheaper. Much laughter was caused by Mr. Chapman's description of the farmer who uses the same solution for dipping his sheep and dogs and destroying plant parasites. The result on the dog was that he was cured but dead. (Much laughter.)

Prof. Weiss, in reply, said that Ireland is much better off in the matter of agricultural advisers than England, and he fancied that here the farmers were finding that out and kicking. The direction in which measures should be taken was in stamping out the causes of the disease by growing plants under healthy conditions. The absorption of copper by plants is infinitesimal, and no injury is likely to result. There are already poisonous substances in plants such as oxalic acid, which in the aggregate would do harm, but are harmless in the small quantities in which they occur.

A vote of thanks was given the lecturer; then the next paper was taken.

Bacteriology of Plasters and Protective Tissues.

By G. Pinchbeck, F.C.S.

The object of this paper was to ascertain the relative sterility of spread-plasters and protective dressings as stored in retail pharmacies, and to suggest means for their better preservation. After briefly remarking upon the history of plasters, mentioning that Hippocrates described the making of them for the treatment of ulcers, and in the seventeenth century they were used for hernia, fractures, etc., and so on up to the time of Lister's introduction of antiseptic dressings and the evolution of rubber-plasters, in Part 1 of the communication the author dealt with :

I. Simple adhesive plasters, (*a*) water-soluble, and (*b*) water-insoluble.

II. Compound adhesive plasters, (*c*) lead, resin, or soap basis, and (*d*) rubber basis.

In examining these bacteriologically, pieces 1 square centimetre were treated with the sterilised water for an hour, and portions mixed with nutrient gelatin and agar media in tubes, and the mixed dilutions incubated in Petri dishes and Esmarck roll at 18°-22° C. (gelatin) and 37° C. (agar), the colonies being counted at the end of twenty-four hours and at the period of maximum growth. All possible precautions were taken to prevent bacterial contamination. The following are the results in colonies per square centimetre :

SIMPLE ADHESIVE PLASTERS.

A Type.

Isinglass, on roll muslin in tin opened for sale, 341.
Arnicated court, on tracing cloth in envelope, new, 71.
Tricolour court, on silk in tablet, old stock soiled, 620.
Tricolour ditto, carried in vest pocket three months, 1,420.

The following organisms were found in the foregoing :

Streptococcus pyogenes, var. *albus.*
Staphylococcus pyogenes, var. *aureus.*
Staphylococcus pyogenes, var. *albus.*
Proteus vulgaris.
Bacillus murisepticus.
B. pyocyaneus.
B. radiatus.
Penicillium glaucum.
Aspergillæ mucorinæ, *Sarcinæ*, and various yeasts.

B. Type.

Adhesive, calico on roller in wood box, frequently handled for sale, 22.

Soap, calico roll in tin, frequently handled for sale, 20.

Rubber adhesive, two samples on reel, without cover, from new stock, *none.*

Rubber adhesive, ditto, opened for minor surgical ailments, 7.

White rubber adhesive, roll cretonne in carton, new stock, 3.

The comparative freedom of these from bacterial contamination will be noted.

COMPOUND ADHESIVE PLASTERS.

C. Basis.

Emp. ferri, roll calico, new stock, 13.
Emp. belladonnæ, roll swansdown, shop soiled, 53.
Emp. cantharides, on adhesive plaster, freshly spread, 160.

The high bacterial content of the last is due to spores introduced with the powdered flies.

D. Basis (rubber).

Capsicum, linen, muslin-faced, perforated, new stock, 5.
Menthol, same as above, in envelope, new stock, *none.*
Belladonna, spread, etc., like menthol, old stock, 31.
Belladonna and aconite, spread, etc., as above, new stock, 2.
Opium, ditto, 17.
Zinc oxide, plaster mull, in sealed cardboard, new stock, *none.*

The author attributed the asepsis of menthol plaster to its active ingredient and the air-tight container. The contamination of opium-plaster comes from the opium itself. The author next dealt with :

PROTECTIVE TISSUES.

Goldbeaters' skin, in envelope, new, 24.
Goldbeaters' skin, carried in vest-pocket three months, 310.
Guttapercha, in box, new, *none.*
Guttapercha, in box, broken package for sale, 5.

The author commented upon the nature of goldbeaters' skin (according to Ure it is prepared from the cæcum of most cattle), which makes it specially liable to bacterial contamination. He concluded the first part of the paper by saying :

(*a*) All plasters, unless sterilised, are septic.

(*b*) The degree of sterility is diminished by atmospheric pressure

The second part of the paper was devoted to the means for rendering plasters aseptic, and in the following paragraphs we give concise abstracts of his recommendations :

Dry Heat is unsatisfactory, as it spoils the plaster.

Solvents.—Washing the surface with chloroform also spoils the plaster.

Chemicals.—The addition of a germicide to the plaster mass is most satisfactory, especially if it is added when the mass is at 35.5° to 65° C., and kept at the appropriate temperature for a short time. Volatile substances like the alphyl and aryl esters, phenols, essential oils, etc., are very active. Whatever is chosen should not affect the skin and the smallest possible quantity should be used. Salicylic acid is unsuitable for the first reason, but thymol, chlor-butyl alcohol, iodol, beta-naphthol, methyl, ethyl and amyl salicylates are suitable. Thymol 0.4 and methyl salicylate 0.6 per cent. added to the mass at 65° C., and maintained at that for an hour thoroughly sterilises it. For water-soluble plasters 1 per cent. of phenol added to the basis just previous to coating is best, but it is obvious from the nature and use of these that bacterial contamination is unavoidable—*e.g.*, wetting the lips contaminates a bit of plaster. A *liquid court-plaster* of the collodion or traumaticin type would be preferable. The author next spoke of the advantages of rubber combination plasters and stated that none of the formulas that he has seen are satisfactory. This applies to the U.S.P. as well. He submitted the following formulæ, which he has devised after many experiments:

ASEPTIC RUBBER ADHESIVE PLASTER.

	Parts		Parts
Resin	4	Sesame oil	1
Japan wax	1	Lead plaster (precipitated)	80
Benzoated beef-tallow	8	Methyl salicylate	0.6
Anhyd. wool-fat	3	Thymol	0.4
Washed indiarubber	2		

Melt the resin, tallow, wool-fat, and wax together; then add the rubber "solution" (prepared by macerating the rubber in five times its weight of benzine) previously mixed with oil. After recovery of the benzine by distillation the whole is strained through three or four thicknesses of gauze, and the lead oleate, previously melted, added. The plaster mass is then sterilised with the methyl salicylate and thymol as previously described. The plaster is then spread on sterile material (shirting, cretonne, etc.), observing aseptic precautions.

ASEPTIC CANTHARIDIN PLASTER.

	Parts		Parts
Cantharidin	0.1	Resin	20
Chloroform...a sufficient quantity		Japan wax	5
Anhydrous wool-fat	15	Sesame oil	5
Washed rubber	10	Methyl salicylate	0.6
Benzoated beef-tallow	43.9	Thymol	0.4

Dissolve the cantharidin, by the aid of heat, in as small a quantity of chloroform as possible; then add the sesame oil and the wool-fat (previously melted). Incorporate with the rubber, resin, tallow, and wax, previously combined as directed under adhesive plaster. Sterilise with the salicylate and thymol, and proceed as described before.

ASEPTIC CAPSICUM PLASTER.

	Parts		Parts
Liquid extract of capsicum (1-2 drug)	10	Resin	20
Anhydrous wool-fat	15	Japan wax	5
Washed rubber	10	Sesame oil	5
Benzoated beef-tallow	39	Methyl salicylate	0.6
		Thymol	0.4

Evaporate the alcohol from the fluid extract (Gerrard's form, B.P.C. 1905) and add to the melted wool-fat and oil. Incorporate the mixture with the combined rubber, resin, tallow, and wax. Then proceed as described under Adhesive Plaster. This plaster contains 5 per cent. of solid extract.

ASEPTIC ZINC OXIDE PLASTER.

	Parts		Parts
Zinc oxide	20	Washed rubber	8
Resin	15	Glycerin	12
Japan wax	4	Methyl salicylate	0.6
Benzoated beef-tallow	25	Thymol	0.4
Anhydrous wool-fat	15		

Sift the zinc oxide and make into a paste with the glycerin. Add the paste to the resin, wax, wool-fat, tallow, and rubber combined as described under Adhesive Plaster. Sterilise with the methyl salicylate and thymol as previously directed, and proceed as described in the case of Adhesive Plaster.

The author spoke finally of discontinuous or fractional sterilisation—*i.e.*, heating three or four hours daily at 54° to 56° C., a temperature which limits the choice of fats, but the following formula is suitable for the method :

STERILE ADHESIVE PLASTER.

	Parts
Washed rubber	12
Carnauba wax	8
Anhydrous wool-fat	30
Glycerin	10
Zinc oleate	40

Melt the wax and fat, mix with the rubber solution. Recover the benzene. Mix the sifted zinc oleate with the glycerin and add to the wax, fat, and rubber. Heat to the proper consistency and spread on linen. Dry under aseptic conditions, cut into strips, wrap in grease-proof paper, enclose in envelopes, and seal. Sterilise by the fractional method.

In conclusion the author, who worked in Messrs. Hough, Hoseason & Co.'s laboratories, recommended that the present official plaster formulæ should be replaced by others, founded on a rubber basis, which can be sterilised.

Discussion.

Dr. **McWalter** said there is a very important practical aspect of the paper. Patients are liable to have dermatitis excited by plasters and take action against the pharmacist who supplied the plaster. If micro-organisms were proved to be present, he imagined that would go against the pharmacist. The micro-organisms, added the doctor, might have been present on the skin before the plaster was applied, but it would be difficult to combat the impression in the judge's mind.

Mr. **Pinchbeck**, in reply, said he had found pathological forms of organisms pretty general in plasters, especially in those with a gelatin basis.

A vote of thanks was given to the author.

The following paper was then taken :

The Decolourising Action of Animal Charcoal.

By Dr. Knecht.

This was a communication from the Manchester School of Technology of an interesting nature. Animal charcoal from various sources contains the ash of the bodies it is made from. A good deal of this ash can be removed by hydrochloric acid, but there is still a considerable residue—ferric oxide—which can be still further reduced by digestion with hydrofluoric acid. In this way an ash of 5.6 per cent. left after hydrochloric acid purification can be reduced to 0.6 per cent. The difference between animal and wood charcoal as regards decolourising properties offers an incongruity which has never been satisfactorily explained. Dr. Knecht was led to examine various charcoals for any peculiarity. He found that there was not more than a mere trace of nitrogen in wood charcoal, but that in animal charcoal there is from 5 to 7 per cent. of nitrogen and 0.5 per cent. of sulphur. These are not casual impurities, and probably are the key to the explanation of the differences in behaviour of wood and animal charcoal. He had tried to eliminate the nitrogen from animal charcoal by heating with caustic soda, but could not effect much reduction—5.6 per cent. was reduced to 3.61 per cent.—but it was found that the decolouring properties of the charcoal, as tested with dyes, was proportionally reduced as the nitrogen was eliminated. The paper was published to secure priority in these observations : (1) That fixed nitrogen is present, and (2) that the decolouring action is in direct ratio to the amount of nitrogen.

Mr. **Naylor** asked whether animal charcoal, purified as suggested, was better than that treated by the old hydrochloric-acid process.

Mr. **Finnemore** had found that samples of charcoal of poor decolouring power could be improved by heating in a closed vessel.

Dr. **Knecht** misunderstood Mr. Naylor's question, and in reply to Mr. Finnemore said he had not tried the method referred to.

The **President**, in proposing a vote of thanks, said the paper was a remarkable one. The method of revivifying charcoal by heat is done on a large scale in every sugar refinery, where the object is to effect economies by reducing the purchases of animal charcoal as much as possible.

Mr. **Franklin** then read his two papers.

Liquid Extract of Cascara Sagrada : an Improved Form.

By John H. Franklin, Ph.C.

The object of this communication was to call attention to the following formula for a miscible liquid extract :

Cascara sagrada in No. 20 powder	20 oz.
Glycerin	8 fl. oz.
Strong solution of ammonia ...	80 minims
Distilled water	a sufficiency

Moisten the cascara sagrada with 15 oz. of distilled water and set the mixture aside for six hours, then pack it loosely in a percolator and percolate with more distilled water until the powder is exhausted ; evaporate the percolate to 12 fl. oz., cool, add the glycerin, allow to stand, filter, and add to the filtrate the strong solution of ammonia.

If the ammonia is not added the liquid is miscible, but loses its brilliancy in half an hour ; with the addition of ammonia solution, as prescribed, the liquid remains clear, is richer in colour than the B.P. liquid-extract, is more palatable, does not deposit on keeping, and is perfectly miscible with water. It is also less costly to prepare than the B.P. preparation, and is probably more active. When the glycerin is added to the evaporated percolate it dissolves some of the deposit produced by the application of heat during evaporation, and this probably accounts for the supposed increased action as a laxative, and also for the ease with which the product can be filtered. A very considerable increase of the alkali over the quantity recommended does not apparently interfere with the activity of the drug. The miscible extract makes an excellent aromatic syrup.

A New Method of Preparing Saccharated Carbonate of Iron, and its Suggested Use in Pharmacy.

By J. H. Franklin, Ph.C.

Ferrous sulphate	26 oz.
Liquid glucose	8 ,,
Sodium carbonate	28 ,,
Distilled water, boiling ...	a sufficient quantity.

Dissolve the ferrous sulphate and 4 oz. of the liquid glucose in 4 pints of the distilled water, and the sodium carbonate in 2 pints of the distilled water ; add the former to the latter, stirring constantly, then add 6 pints of the distilled water, mix, cover, and allow the precipitate to settle ; separate the supernatant liquid, twice repeat the process of washing and separation, using 8 pints of the distilled water each time ; mix the precipitate with the remaining 4 oz. of liquid glucose, evaporate on a steam bath as far as possible, dry quickly in a drying-chamber, and reduce to a fine powder.

A batch prepared by the above method was tested periodically along with a freshly prepared sample of the B.P. formula (both kept in loosely corked bottles) on seven occasions from March 8 to July 8, 1907, and the percentage of $FeCO_3$ by the new formula was 66.5 at the first date and 65.2 at the last. The product made by the B.P. formula showed 34.6 per cent. of $FeCO_3$ on the first date, and 32.85 per cent. on July 8. The sample prepared by the suggested formula and kept for four months in a full, carefully sealed bottle diminished to the extent of 0.1 per cent. of $FeCO_3$ in that time. The idea underlying the experiments was to obtain a compound containing at least 66 per cent. of ferrous carbonate, or preferably 69 to 70 per cent., and a batch made by the same formula, but increasing the ferrous sulphate to 26½ oz. and washing the precipitated carbonate with three separate lots of boiling water, instead of two washings, was found to test 69.4 per cent. Both batches contained a heavy trace of sulphate, and two further lots were tried, using the increased quantity of ferrous sulphate and substituting a sufficient quantity of ammonium carbonate for the sodium salt. These tested 59.3 per cent. and 64.9 per cent., this being accounted for by the greater bulk of carbonate of iron which results when ammonium carbonate is employed as precipitating agent ; the glucose not exerting its preservative properties to the same extent in the increased volume of powder. The sulphate of soda retained in the product is not considered seriously objectionable, and the stronger of the two batches, prepared with sodium carbonate, was mainly used in the preparation referred to later. Several experiments were tried with increased quantities of glucose, and a mixture of cane sugar and glucose, but they were rather hygroscopic and were not proceeded with. The product is a free dry powder, which keeps well, is twice the strength of ferrous iron as compared with the B.P., and is distinctly greener than the latter, either when freshly prepared or after it has been kept for four months. These results, it is important to note, are obtained with less labour than the official method. The following formulæ have been constructed to show how the new preparation can be easily applied in the dispensing of a number of important galenical preparations containing iron :

Iron Tablets.

Saccharated carbonate of iron ...	1,000 grains
Liquid glucose, Water, equal parts ...	a sufficient quantity
Lubricant	a sufficient quantity

Granulate with the liquid glucose and water, dry, and add the lubricant to produce 1,056 grains ; press into tablets 1, 3⅕, or 4⅘ grains each, representing 1, 2, 3 Blaud's pills respectively.

The tablet representing one Blaud's pill, after keeping for one month in an open cardboard box, tested 0.955 grain ferrous carbonate per tablet (average of twenty). The granulating and drying is a severe test, and a little depreciation may be expected, but the loss would be more than compensated for by dividing 100 grains into sixty instead of sixty-six tablets, according to the following formula, in which the glucose is increased :

Saccharated carbonate of iron ...	1,000 grains
Liquid glucose (3 parts),	
Water (1 part)	a sufficient quantity
Lubricant	a sufficient quantity

To make 600 tablets, each containing 1 grain ferrous carbonate.

Iron Pills.

Saccharated carbonate of iron ...	648 grains
Liquorice root in powder	162 ,,
Liquid glucose	216 ,,
Water	54 ,,

Make a mass and cut into pills.

2½ grains each = Iron pills of B.P. strength
5 ,, ,, = ,, ,, double ,,
7½ ,, ,, = ,, ,, triple ,,

This formula is much more simple than the official one, and there is no waiting for the completion of the reaction as in the B.P. process. The resulting pills are smaller, even the triple pills being only slightly larger than the B.P. pill. Kept in an open cardboard box for one month, the small pills test 1.005 grain ferrous carbonate per pill (average of twenty). The liquorice-powder is used to counteract the tendency of the pill to lose its shape if massed with glucose alone.

Iron Capsules.

Saccharated carbonate of iron ...	900 grains
Soft paraffin	200 ,,
Liquid paraffin	400 ,,

Mix thoroughly and fill into capsules.

2½ grains is equivalent to one Blaud's pill
5 ,, ,, ,, two Blaud's pills
7½ ,, ,, ,, three Blaud's pills

The second-sized capsules kept for three months in an open box tested 1.965 grain ferrous carbonate (average twenty).

Arsenic, strychnine, etc., can be easily combined in the above formulæ.

Since this paper was prepared Mr. Franklin has added the following formula for mistura ferri composita, which he finds to be a quicker method of preparing this galenical, and although the mixture when first made is not so attractive as the Pharmacopœial article, it keeps for months :

Saccharated iron carbonate ...	16 grains.
Syrupy glucose	16 grains.
Powdered acacia	20 grains.
Tincture of myrrh	4 drs.
Spirit of nutmeg	50 mins.
Rose-water	a sufficiency

Reduce the saccharated carbonate of iron to a fine powder, triherate with the syrup of glucose and continue the trituration with a few drops of rose-water to form a smooth thin paste, gradually add more of the rose-water and add the acacia diffused in the tincture of myrrh and spirit of nutmeg, finally making the product measure 10 fl. oz. with rose-water.

DISCUSSION.

Mr. FINNEMORE asked whether the cascara extract would not lose its activity. When cascara extract is prescribed with sal volatile the mixture soon looses its taste and medicinal properties. In regard to making concentrated Blaud's pills, one way is to use exsiccated iron sulphate and exsiccated potassium carbonate separately mixed with lactose, and then mass. Another way is to separately granulate the two salts, mix in the proper quantities and compress.

Mr. ALCOCK, referring to Mr. Franklin's song of the previous evening, which said " take my council, happy man, act upon it if you can," said he hoped chemists would try to act on the capital hints given in the paper. He suggested that the ammonia could be added at an earlier stage. An eminent Birmingham surgeon has observed that the tissues of patients who have habitually taken cascara are tougher than in other people. He asked Mr. Franklin to be sure that he has got ferrous carbonate present; it may be that an oxy-sulphate of iron is obtained. Mr. Alcock also protested against assuming that what is found in testing these iron preparations is ferrous carbonate; it may be several other salts. There is no process which will tell definitely whether a pill contains a given quantity of ferrous carbonate.

Mr. HAROLD WYATT said that ammonia used sensibly is a valuable thing whether with senega, for dissolving glycyrrhizin in liquorice solutions, or in cascara extract. Proper regard must be had to proportion; the addition of an infinitesimal portion of ammonia is then a decided advantage. The deterioration of cascara mixtures with sal volatile is due to excess of alkali being used. The suggestion for precipitating ferrous carbonate is a sensible one, and the sample handed round shows that it is successful. His experience is that the most usual reason that Blaud's pill will not keep is absence of moisture. It is not difficult to make ferrous carbonate and keep it if made by precipitation in the presence of sugar. Such a salt may be evaporated to dryness and cut into pills; the mass is of a pipeclay colour and retains that tint for months. In regard to the formula for mist. ferri he protested against the use of tincture of myrrh in place of myrrh.

Dr. SYMES, dealing with the cascara paper, said it was a well-known fact that even weak alkali acts on a bitter resin and in time reduces its alkalinity. He (the speaker) had been in the habit of keeping decoction of aloes for twelve months before sale, and the taste at the end of that time was much less bitter. But the question of activity arose, and the same thing might apply to cascara. The addition of glycerin to the percolator before evaporation is an advantage in the mode of preparation. With regard to the ferrous carbonate paper, he suggested using saccharated water for washing the precipitate.

Dr. JOWETT desired to utter an emphatic protest against the active principle of cascara being described as a resin. He had investigated the subject, with the result that it is not known what the active principle of cascara really is. He had isolated the active principle, which was certainly not a resin, but showed behaviour somewhat analogous to anthraquinone derivatives, but nothing was certain. He asked whether Mr. Franklin had really tested the activity of the cascara prepared by his method. He thought Mr. Franklin's assumption that the supposed increased activity due to the deposit dissolved up in the glycerin was perhaps erroneous.

Mr. GILMOUR said he had prepared an ammoniated liquid extract of cascara according to White's process, which a number of doctors used in practice. The opinion of these medical men (nine or ten in number) is that it is as active, if not more active, than the official article.

Mr. FRANKLIN, in reply, said he was rather diffident of bringing such a paper before connoisseurs of cascara. With regard to activity, the concensus of opinion in his experience was that it was more active than the other, and Mr. Gilmour's testimony had disposed of the subject satisfactorily. All he claimed for his method was that he had found it made a better preparation than the B.P., and it was more miscible. He would like to emphasise that it did not pretend to be a tasteless cascara at all. Its keeping properties, so far as he had experimented, were good. He had kept some in an unstoppered bottle for eleven months, and it still seemed all right. The use of the exsiccated tablet of ferrous carbonate, suggested by some speaker, was not, he said, Blaud's pill. He had found the basic sulphate to be not more than 1¼ per cent.

The PRESIDENT said thanks were due to Mr. Franklin, and his formulæ should be put in the B.P.C. "Year-book." He said special thanks were due to Mr. Franklin, and these were heartily accorded.

At 12.40 the following paper came on :

The Pungent Principle of Ginger.

By HENRY GARNETT, F.C.S., and JAMES GRIER, M.Sc.

The objects of this investigation were to ascertain more fully than Thresh and Soden and Rojahn have done the nature of the pungent principle of ginger, and to determine a method for its separation from, and estimation in, the drug and its preparations. The former part of the work alone was dealt with in the communication, and the essential oil was not touched. The authors corroborated Thresh's work generally. As to his gingerol, Mr. Garnett four years ago ascertained that it has phenolic properties, and in the present investigation these phenolic constituents have been isolated, but the authors have not yet determined whether they are chemically homogeneous or all physiologically active. A reddish-brown colouring-matter adheres with great persistency to the active principle. Under ordinary conditions the phenol is very stable, but in alkaline solution it is not so, and loses pungency quickly, becoming converted into inert resinous matter. It was the discovery of the latter fact and loss of a considerable amount of material which prevented the authors giving a complete account of gingerol. They failed to obtain any derivative from which a pure product might be regenerated, and the phenolic bodies would not crystallise. Distilled under reduced pressure (18 mm.) 5 grams gave, at 235° to 250° C., a considerable quantity of distillate after apparent decomposition—viz., a viscous, pale straw-coloured oil, which redistilled unchanged. The authors considered this to consist chiefly of gingerol. The crude phenols were also purified by boiling with petroleum ether (b.p. 36° to 50° C.), and 7 grams of the pale reddish oil so obtained was distilled at 18 mm. as before. There was no apparent decomposition on this occasion, distillation beginning at 180° C., rising quickly to 240° C., and more slowly to 250° C. The authors conclude that Thresh's gingerol is not a simple substance. This inconclusive report was supplemented by details of experiments A, B, and C, and the following test for pure ginger preparations, and those which have been fortified with capsicum, viz. :

> Digest, say, 10 c.c. of the tincture or essence on a water-bath with a small quantity of caustic alkali for fifteen minutes, then evaporate the alcohol, and acidify faintly with hydrochloric acid. Transfer to a test tube, rinse the dish with 5 c.c. of ether, and add to test tube. Shake, and taste the ethereal fluid. If pure ginger, there is no pungency, if pungent, the ginger preparation has been adulterated with capsicum.

The authors by this test detected 1 of capsicum in 100 of ginger.

DISCUSSION.

Dr. **JOWETT** recommended the investigators to keep an open mind in regard to the homogenity of gingerol. In the case of cannabinol, it was found that on regeneration it was free from activity. The method used was distillation under a very high vacuum under 1mm. which he (the speaker) thought might be tried by the investigators. The vacuum was obtained by the use of liquid air, which could probably be obtained in Manchester.

Mr. **GRIER**, in reply, said that the inactivity of a substance on regeneration was not unexpected. There is no difficulty in obtaining liquid air, as a factory has been established in the University. The ginger principle had not been isolated sufficiently pure or in large enough quantity to conduct many experiments.

The **PRESIDENT** referred to Mr. Grier's work at the University, where, he added, he has proved himself a true master of science. (Hear, hear.)

The following paper left over from Tuesday was then taken :

The Officinal Test of Drugs and Chemicals.

By J. P. GILMOUR.

After a preliminary glance at the status and scope of the British Pharmacopœia, in the course of which he quoted the judgment in Robertson *v.* Duncan, Flockhart & Powell (*C. & D.* 1906, i. 921) as entitling the pharmacist to employ a non-official solvent or preservative for a pharmaceutical preparation, provided he can demonstrate that it serves the purpose as well as or better than that officially ordered, the author of this communication submitted that the prescriber-*cum*-dispenser, or the dispenser *per se*, must take the responsibility of personally authenticating the materials which he handles. Failure to take the simple precaution of identifying a drug or its preparation when added to stock, or transferred from a store to a service container, has often led to serious or fatal poisoning. Within his personal knowledge preliminary tests have had such detective results as these : Tinct. aconiti sent for tinct. cimicifugæ, quinine sulphate mixed with caffeine, potassium iodide mixed with potassium bromide, ext. nucis vom. liq. sent for ext. cascaræ sag. liq., plaster of Paris sent in a calcined magnesia bottle, and hydrarg. perchlor. put in a bottle for calomel. Many retail pharmacists are deterred from engaging in the systematic testing of drugs and chemicals for two reasons :

> (1) Such work lies beyond the reach of anyone save a professional analytical chemist. (2) Even if this disability is overcome the labour is too troublesome and costly to be compatible with ordinary shop business.

The former misconception is traceable largely to the fact that, while the Pharmaceutical Society's present qualifying examination meets and even exceeds statutory requirements, it is nevertheless insufficient as a measure of the candidate's equipment for exact scientific work. The second inhibitory cause is rendered inoperative by a reference to the B.P. Appendix giving the list of reagents, test solutions, etc. : most of the materials are included in the regular stock of every pharmacist in business, and the rest are for the most part cheap and easily procurable. The test and volumetric solutions can be readily prepared and keep well, and the following list of apparatus serves for an approximately complete outfit :

Chemical balance and set gram weights.
Microscope, 50 to 300 or 400 diameters.
Burette and stand.
Nitrometer.
Set of beakers.
Stoppered litre flask.
Set of flasks.
Evaporating basins.
Test tubes.
Glass tubing.
Two separators.
Copper water-bath with rings.
Chemical thermometer —20° to 360° C.
Specific gravity bottle or pyknometer.
Fractionating flask.
Cubic centimetre measures and pipettes.
Platinum foil and wire.

As extras for the scientific sybarite who can pay for luxuries there may be suggested a supplementary list—viz., thermostat, glass or metal aspirator, range of hydrometers, polarimeter. In any case, the total initial outlay ought not to exceed 10*l.*, and a few shillings per annum will cover breakages. If the work of testing is done methodically it takes surprisingly little time.

The gain from systematic officinal testing as had been indicated is manifold :

> *First,* the dispenser or vendor is assured from direct experimental knowledge of the identity, purity, and activity of the commodities taken into stock, and consequently that he is getting what he has ordered and is to pay for, or has prepared and has to vouch for. Moreover, he can dispense or vend the goods with the clear confidence and conscience that positive knowledge alone imparts.
>
> *Secondly,* he attains the personal satisfaction of reducing to fruitful practice the otherwise largely disused or undeveloped technical training which he underwent for the qualifying examination, and so maintains and accelerates in himself that movement of the intellect which—above all things—gives life, zest, and signficance. Such practice will also equip the pharmacist more efficiently for the duty, too often neglected or but perfunctorily performed, of giving his assistants and apprentices practical instruction in physical and chemical testing as applied to materia medica.
>
> *Finally* it will have the material effect of raising the status of the pharmacist to that professional level to which the average pharmacist of the present aspires rather than ascends.

For the purpose of illustrating and enforcing the doctrine of this paper the author quoted from his seventeen years' collection of notes and gave a table (p. 182) showing the drugs and chemicals tested, from which it appeared that 11.08 per cent. of the total number of samples examined failed to satisfy B.P. requirements, the responsibility for the deficiency being divisible between manufacturer, wholesaler, and retailer. The following notes were also added :

> *Aqua Destillata.*—Unless the pharmacist prepares this for himself there is great, if not insuperable, difficulty in procuring it pure. In nine cases out of ten the sample has an odour, yields a residue which is quite visible and often exceeds the U.S.P. limit of 0.075 gram per 1,000 c.c., and fails to give clear solutions with soluble silver salts.
>
> *Liq. Calcis.*—Most commercial samples give more than traces of chlorides. The U.S.P. has no test for these. The most satisfactory product is that prepared with calcium hydroxide derived from marble.

Table I.

Name of Drug, &c.	No. of Samples Examined	B.P.	Not B.P.
Ac. acetic. fort	30	24	6
Ac. acetic. glaciale	10	8	2
Ac. benzoic	6	6	—
Ac. hydrobrom. dil.... ...	12	12	—
Ac. hydrochlor. ft.	9	9	—
Ac. hydrocyan. dil.	34	21	13
Ac. nitric fort	14	6	8
Ac. oleic	5	3	2
Ac. salicylic	13	13	—
Ac. sulphuric ft.	15	11	4
Ac. sulphurosi	8	2	6
Adeps	50	48	2
Amylum	24	20	4
Aq. destillata...	48	7	41
Benzoin (Siam)	6	—	6
Bismuth. salicylat	8	—	8
Ol. cajuputi	8	7	1
Liq. calcis	100	76	24
Calx. sulphurata	12	8	4
Cascar. sag. ext. liq. ...	73	61	12
Lin. camphoræ	86	80	6
Catechu	7	7	—
Cera alba	18	9	9
Cetaceum	10	10	—
Colocynth. pulp.	5	3	2
Copaiba	25	20	5
Creosote	17	17	—
Creta præparata	12	8	4
Crocus	20	19	1
Ol. eucalypti	27	25	2
Ferrous arsenate	10	—	10
Syr. ferri iodid.	37	37	—
Ferri phosphas.	13	—	13
Ferrum redactum	9	1	8
Glycerin	25	15	10
Hydrargyri oleas	11	—	11
Liq. hydrogen. peroxid. ...	120	14	106
Gossypium	18	15	3
Hydrarg. perchlor.	15	15	—
Hydrarg. c. creta	8	6	2
Jalap	12	12	—
Juniperi oleum	4	4	—
Lavandulæ oleum	10	10	—
Linum contusum	27	22	5
Liq. magnesii carb.	96	94	2
Ol. morrhuæ	150	150	—
Ol. olivæ	75	73	2
Paraffinum durum	13	11	2
Paraffinum liquid	9	5	4
Paraffinum molle	17	17	—
Paraldehyde	13	13	—
Phenazone	20	20	—
Potass. citras...	18	18	—
Potass. iodid....	35	35	—
Ol. ricini	59	59	—
Saccharum lactis	14	14	—
Saccharum purificatum ...	114	114	—
Sapo mollis	13	13	—
Scammony resin	9	9	—
Sodæ chlorinat. liq.	10	2	8
Sodii bicarb.	87	87	—
Sodii carb.	19	19	—
Sodii chlorid.	14	14	—
Sodii nitris	7	7	—
Sodii phosphas	5	5	—
Sodii salicylas	115	115	—
Sodii sulphas	34	34	—
Sodii sulphis	19	19	—
Soda tartarat	94	94	—
Spt. æth. nit.	58	54	4
Spt. vini rect.	45	45	—
Sulphur precipit.	24	24	—
Sulphur sublim.	76	76	—
Terebinth ol.	38	38	—
Theobromatis ol.	19	10	9
Tragacanth	14	14	—
Zinci carbonas	18	18	—
Zinci chloridi...	9	9	—
Zinci oxid.	25	25	—
Zinci sulphas	29	29	—
Total number of articles, 80	2,445	2,074	371

Ext. Cascaræ Sagrad. Liq.—A non-B.P. sample contained glycerin. The objection is not to the glycerin but to the attempt to pass off a glycerinated liquid extract of cascara as B.P. The samples examined varied extraordinarily as to the percentage of extractive. One sample yielded as much as 30 per cent., but there were some as low as 18 per cent. The activity of the preparation does not necessarily depend on the amount of extractive.

Lin. Camphoræ.—The non-B.P. samples detected were supplied by wholesalers to public institutions. The writer has satisfied himself, by repeated estimations of lin. camphoræ stored under diversified test conditions, that loss of camphor by volatilisation at ordinary temperatures is trifling. The most essential thing is to put in all the camphor.

Ferrous Arsenate.—The mode of preparing this needs improvement. Some of the commercial samples give absolutely no reaction for ferrous salt. Ferric arsenate is supposed to be quite inert according to the theory of administering ferric hydroxide for arsenical poisoning.

Ferrous Phosphate.—Always much below the B.P. percentage and a very inconvenient form for dispensing. It might be an advantage to adopt the ferri phosphas solubilis, U.S.P.

Ferrum Redactum.—At the time when there were several prosecutions on account of the presence of arsenic in this, attempts were made to procure an arsenic-free specimen. A number which were so certified failed to satisfy the Gutzeit test. The writer had to wait six weeks for a supply positively purged from the pervasive contamination. The next B.P. might advantageously specify a reasonable limit for arsenic.

Hydrargyri Oleas.—All commercial samples examined showed sodium chloride in considerable amount due to insufficient washing of the oleate. The present process is clumsy and the product variable in consistency and stability. Why not revert to the 1868 process or adopt the U.S.P. modification?

Liq. Hydrogenii Perox.—It seems certain that average commercial samples, unless recent, never contain 10 volumes H_2O_2. It would be better to follow the precedent set in the case of spt. æth. nit. and allow a margin for deterioration or prepare a stronger liquor.

Liq. Magnesii Carbonat.—Commercial samples average 7 grains of the official magn. carb. to the ounce and invariably contain sulphate, but as it is difficult to eliminate sulphate the B.P. definition should be altered to read "nearly free from sulphate." The writer has not found any deficiency in the amount of mag. carb. in samples prepared by himself even after prolonged keeping, so that the poorness of commercial samples must be due to remissness in the process of production or to indifferent storing.

Ol. Olivæ.—One of the samples which was largely adulterated with cottonseed oil was said to be of Levantine origin, and was offered by a foreigner at a very low price.

Saccharum Purificatum.—The B.P. tests are not stringent enough. They ought to be devised to exclude all "faced" sugars, which play havoc with medicinal syrups. The U.S.P. stipulation that aqueous and alcoholic solutions should not deposit a sediment on prolonged standing meets the case.

Sodii Salicylas.—The B.P. does not require this salt to be "physiologically pure," although by fixing the limits of the melting point of ac. salicylic. it practically ensures the absence of cresols from the latter, but cresol-containing samples of sodium salicylate are now of rare occurrence.

Spt. Æth. Nit.—Theoretically it might be better if this preparation were superseded by liq. æthyl nitritis, but medical practitioners insist that they get better results with the spirit, a circumstance which favours the doctrine that its therapeutical value is not exclusively due to the ethyl nitrite.

Sulphur Sublim.—Squire states that commercial sulphur sublim. is always more or less acid, and that only washed sulphur fulfils the B.P. requirement as to freedom from acidity. The majority of the samples examined were quite neutral, and must, therefore, if Squire be correct, have belonged to the "washed sulphur" group.

Terebinthinæ Oleum.—T. Dunlop and others have not found the glacial acetic test workable. They cannot get a perfect solution of 1 : 1. In the author's experience this residual insolubility is a conclusive proof of the impurity of the sample of turpentine. The test answers infallibly with any good rectified turpentine, but not with the ordinary commercial article which is too often supplied for medicinal purposes.

The author reserved notes on unofficial drugs and chemicals and the microscopic examination of powdered drugs for a future occasion.

Discussion.

Mr. **White** said Mr. Gilmour seemed to rather depreciate his work. He need not do that, as the paper contains a record of 2,445 analyses.

The **President** added that it also disposed of the suggestion that retail pharmacists have not the opportunities for such work. (Laughter.)

Exactly at one o'clock Mr. Quant's paper was read.

The Keeping Properties of Infusion of Quassia.

By ERNEST QUANT, F.C.S.

This paper dealt with experiments made to ascertain whether infusion of quassia made with boiling water keeps as well as infusion made with cold water. The author made two infusions of British Pharmacopœia strength with cold distilled water and boiling distilled water, infusing fifteen minutes. These were strained or filtered, and put in bottles either full or half-full. Observations were made from day to day, including microscopical examination by the "hanging-drop" method, which revealed motile bacteria in every specimen and in about equal numbers on the first day, and at the end of ten days such facts had been recorded as enabled the author to infer that a cold infusion is preferable to one made with boiling water. After an interval of eight months two other series of infusions were made, and from these cultivations on agar incubated at 37° C. and on gelatin at 16° C., the following results being obtained :

Incubation	Infusion	Plate	No. of Colonies per c.c.	Note
24 hours	Cold water	Agar	150	Colonies very small and white
,,	,,	Gelatin	None	—
,,	Boiling water	Agar	250	Colonies larger, showing variation in colour
,,	,,	Gelatin	None	—

At the end of forty-eight hours the gelatin plates showed no distinct colonies, but much liquefied gelatin was produced. The author endeavoured to ascertain if the present method of infusing can be improved. A B.P. infusion was prepared, and after straining through cotton wool was divided into two portions, one being reserved and bottled, and the other brought to the boiling-point, allowed to cool, then bottled. Another infusion was made with diluted chloroform-water, 1 in 1,000. These infusions were then plated out in the same manner as those already recorded, and it was found that the cold-water infusion gave on agar 200 to 250 colonies per c.c. at the end of twenty-four hours, the cold-water infusion boiled gave sixty colonies, and the chloro-water infusion 200 to 250 colonies. Gelatin plates revealed no distinctive colonies, only liquefaction. After eight days the cold infusion which was boiled was found to be perfectly clear, free from odour, and the taste equal to that of a freshly made infusion. The portion of the same infusion not boiled was distinctly cloudy in appearance, and had a perceptible odour. The author recommended that to the present official directions should be added instructions "to boil for a few minutes and allow to cool."

DISCUSSION.

Mr. J. R. **HILL** said the suggestion is by no means new; it was made by Stephenson some forty years ago. The method was to place the infusions in bottles and in water, bringing the water to the boiling-point and covering the mouth of the bottle with skin. Mr. Currie more recently modified this by plugging the neck of the bottle with cotton-wool and then sterilising the infusion. Such a preparation keeps good for months.

Mr. **DRUCE** said that recently when travelling in an out-of-the-way district in Scotland he was troubled with midges. A friend recommended him to use quassia, but insisted that the infusion must be boiled, as it keeps better. As an application against midges chemists should bear in mind this decoction of quassia. It is used by freely dabbing the face with the decoction.

Dr. **MCWALTER** asked how it came about that the gelatin liquefied if no micro-organisms were present. His experience is that quassia infusion can be kept sterile if boiled after being made.

Mr. **QUANT**, in reply, said he looked at the matter from a practical point of view. It is no use sending out a sterile mixture, as the patient must admit air when taking the first dose from the bottle. An infusion made with boiling water goes bad much quicker.

The PRESIDENT in thanking the author congratulated him on his first paper to the Conference.

It was here announced that the following three papers would be taken as read, the President adding that they were scarcely suitable for discussion :

Chemical Examination of the Fruit of Brucea Antidysenterica, Lam.

By FREDERICK B. POWER, Ph.D., and ARTHUR H. SALWAY, Ph.D.

At the 1903 Conference a paper on the chemical examination of kô-sam seeds was communicated by Power and Lees (*C. & D.* lxiii. 234). These are the fruit of *Brucea sumatrana*, Roxb. For the present authors Messrs. Burroughs Wellcome & Co. obtained, by the courtesy of Sir J. L. Harrington, K.C.V.O., and Dr. W. A. M. Wakeman, of the British Legation at Adis Ababa, Abyssinia, a supply of the bark and fruit of *Brucea antidysenterica*, which is used successfully in that country for diarrhœa and fever. Dr. Wakeman found it difficult to obtain the drug, and he said of it :

> The kernels of the dried seeds (crushed) are used occasionally by the natives of these parts where it grows, both externally and internally. Among some of its uses are those of a purgative, vermifuge, and alterative internally, while the local application to raw wounds is believed to encourage granulation and to arrest putrefaction.

The plant is known as "Waginus" in Abyssinia, and is chiefly found in the province of Gojam. The fruits, as received by the authors, were considerably larger and more coarsely reticulate than those of *B. sumatrana* (kô-sam seeds), and also much lighter in colour. As an indication of the relative weights, they noted that about five of the former and thirty of the latter, respectively, weigh 1 gram. The kernel of the seed possesses an intensely and persistently bitter taste. The greater part of the communication then followed, and it comprised chiefly a record of the laboratory work done in the examination of a little over 2 kilos. of the fruit, a preliminary examination having shown that successive extraction with the following solvents, and the resulting extracts finally dried in a water-oven until of constant weight, gave the following results :

Petroleum (b.p. 35-50° C.)	extracted	19.15 per cent.
Ether	,,	1.05 ,,
Chloroform	,,	2.20 ,,
Alcohol	,,	6.95 ,,
	Total extract	29.35 per cent.

A thorough examination of the extracts obtained from 2 kilos of the fruit enabled the authors to arrive at the following conclusions respecting its more important constituents :

1. A fatty oil, amounting to 22.16 per cent. of the weight of the fruit. This oil, on hydrolysis, yielded chiefly oleic acid, together with a small amount of an acid having a higher degree of unsaturation, which is probably linolic acid; considerable amounts of palmitic and stearic acids, and a very small quantity of acetic and butyric acids. It afforded, furthermore, a small amount of phytosterol, $C_{20}H_{34}O,H_2O$ (m.p. 135-136° C.), whilst another phytosterol, melting at 147° C., was obtained from the petroleum extract of the resins.
2. A small amount of free volatile acids, consisting of a mixture of formic and butyric acids.
3. A quantity of resinous substances, corresponding to about 1 per cent. of the weight of the fruit. From these, with the exception of a small amount of the above-mentioned phytosterol, nothing crystalline could be isolated.
4. A bitter principle, or possibly a mixture of such principles, which could only be obtained in an amorphous form.
5. A considerable quantity of amorphous, yellow colouring-matter.
6. A large amount of a sugar which yielded an osazone melting at 205° C., and was therefore evidently glucose.

The constituents of the fruit of *Brucea antidysenterica*, Lam., are thus found to be very similar in character to those of the fruit of *B. sumatrana*, Roxb. ("kô-sam seeds"), and it may consequently be assumed that the two species possess similar medicinal properties. The bitter principles appear, however, to be contained in relatively larger amount in the fruit of *B. sumatrana* than in that of the Abyssinian species, and in view of the difficulty experienced in collecting the fruit of the latter, it is not probable that it will acquire a very extended use. It may finally be noted that the Pharmacopœia Nederlandica (Editio quarta, 1905) has given official recognition to the fruit of *Brucea sumatrana*, Roxb., which is described under the title "Fructus Bruceæ," and it is there stated that in the Dutch East Indies this is known, among other names, as "bidji makasar" (grana macasaria) and "tambera maridja."

This paper and the following one were contributed from the Wellcome Chemical Research Laboratories.

Examination of the Bark of Brucea Antidysenterica.

By Arthur H. Salway, Ph.D.

A small quantity of this bark was obtained through Lieut.-Col. Sir J. L. Harrington, K.C.V.O., C.B., British Minister at Adis Ababa, Abyssinia, and its constituents compared with those of the fruit of the same plant, especially with reference to the bitter principle contained in the latter. Both parts of the plant are stated to be used with success in Abyssinia in the treatment of diarrhœa and fever (compare Engler, "Die natürlichen Pflanzenfamilien," iii. 4, 220 Liepzig, 1896).

The bark was in small fragments of a light brown colour, and possessed a slightly bitter taste. In a Soxhlet apparatus it yielded to petroleum (b.p. 35°-50° C.), 1.22 per cent.; ether, 0.96 per cent.; chloroform, 0.78 per cent.; alcohol, 8.48 per cent.; and water, 7.22 per cent.—in each case dried at 100° C.; the total thus being 18.66 per cent.

Of the finely ground bark 675 grams was extracted with hot alcohol. After the removal of the greater portion of the alcohol steam was passed through the thick dark-coloured extract, diluted with water, in a distilling flask. The distillate, which contained a few oily drops, and had an acid reaction, was extracted with ether. This removed a very small quantity (about 0.2 gram) of a yellowish brown essential oil, which, on standing, partially solidified. The acids in the aqueous distillate were precipitated as barium salts, and gave the reactions of formic and butyric acids, and of acetic acid more freely.

The contents of the distilling flask consisted of aqueous liquid (A) and a quantity of resin (B), which were separated by filtration. In the endeavour to isolate a bitter principle from A the author followed the method which Power and Lees adopted in the case of the fruit of *Brucea sumatrana* (*C. & D.* 1903, ii. 234)—viz., shaking with chloroform, washing the combined chloroformic liquids with a little water, and after drying with calcium chloride removing the chloroform, when 1.6 gram of a dark brown amorphous product was obtained, which possessed a bitter taste. This was purified by dissolving in a little alcohol, mixing with prepared sawdust, thoroughly drying the mixture, then extracting in a Soxhlet apparatus with perfectly dry ether. This yielded about 1 gram of a viscid, dark brown product, similar in appearance and properties to the chloroform extract from which it had been obtained.

The aqueous liquid which had been extracted with chloroform was treated with a slight excess of basic lead acetate. This produced a voluminous, deep yellow precipitate, which, after washing with water, was suspended in water decomposed by hydrogen sulphide, and the mixture filtered. On concentration under diminished pressure a reddish-brown liquid was obtained, which, on long standing, deposited a brown amorphous solid, but nothing crystalline could be isolated from it. The liquid gave with ferric chloride a green coloration, indicating the presence of tannin. The filtrate from basic lead acetate precipitate was freed from lead, filtered, and concentrated under diminished pressure. The light brown, syrupy liquid thus obtained still possessed a very bitter taste, and yielded with phenylhydrazine acetate a crystalline osozone, which melted at 205° C., and therefore evidently contained a considerable amount of glucose.

The resinous substances (B) formed a brittle, black, amorphous solid, which yielded to petroleum 9.90, ether 4.40, chloroform 3.00, ethyl acetate 0.45, and alcohol 4.80 grams, with a total of 22.55 grams.

The light petroleum extract was a soft, dark coloured, waxlike mass, which was treated with alcoholic potash, alcohol removed, water added, and extracted with ether. A gram of solid was obtained from the ethereal liquid, and this crystallised from acetic ether in flat plates, m.p. 133° C. It was recognised as a phytosterol, $C_{20}H_{34}O$. The alkaline liquid from which the phytosterol had been extracted yielded no crystalline substance. The investigation shows that the bark of *Brucea antidysenterica*, like the fruit, contains some bitter substances, but in neither case could these be obtained in the form of definite products.

Examination of the Bark of Brucea Sumatrana.

By Walter Thomas.

A quantity of this bark was obtained through Dr. H. N. Ridley, Director of the Botanic Gardens, Singapore. Its collection was attended with considerable difficulty, for, as stated in a communication from Dr. Ridley to Messrs. Burroughs Wellcome & Co., the plant is a tender shrub, the stems of which are barely an inch in diameter, and the bark not easily removed. It was also noted that, although the bark is distinctly bitter, it is much less so than the fruit, and therefore probably contains less of the bitter principle. The bark was in thin strips, of a light brown colour externally, and paler on the inner surface. It yielded to petroleum (b.p. 35°-50° C.), 0.42 per cent.; to ether, 0.68 per cent.; to chloroform, 0.86 per cent.; to alcohol, 2.40 per cent., and to water 5.62 per cent.; total, 9.98 per cent. Of the bark, a quantity (3,833 grams), in moderately fine powder, was extracted by percolation, first with cold alcohol and subsequently with hot alcohol, as it was found that the latter removed a considerable quantity of a substance which was practically insoluble in cold alcohol, and separated from the hot alcoholic extract on cooling in the form of a light brown gelatinous mass. The two extracts were, therefore, separately examined.

The following is a brief epitome of the results:

Cold Alcohol Extract.—On treatment with steam as in the case of Dr. Salway's investigation, 2.5 grams of a light greenish yellow essential oil, with unpleasant odour, was obtained. Acetic, formic, and butyric acids were found in the aqueous distillate. The aqueous liquid from which the oil and acids were distilled contained a black amorphous resin, from which it was filtered. By means of chloroform a dark red viscid liquid was extracted, which was separated into (1) a small amount of resin, (2) an amorphous scarlet coloured solid, and (3) a deep red syrupy liquid—the last containing a bitter principle, apparently different from that yielded by the fruit (*C. & D.*, 1903, ii. 234). The aqueous liquid from extraction with chloroform yielded nothing of a definite nature except potassium chloride and nitrate, and indication of presence of protein substances.

Hot Alcohol Extract.—The light brown amorphous resinous substance which separated on cooling the alcohol was extracted, and yielded:

(*a*) To *Petroleum* a light green, fatty solid amounting to 5 grams.

(*b*) To *Chloroform*, a dark brown, friable resin, amounting to 12 grams.

(*c*) To *Alcohol*, a dark brown resin amounting to 1.2 grams.

From the petroleum extract on hydrolysis with alcoholic potash were obtained colourless crystals, m.p. 75° C. (agreeing with that of the hydrocarbon pentatriacontane, $C_{35}H_{72}$), but the amount was insufficient for analysis. The alkaline liquid gave evidence of butyric and acetic acids, as well as one having m.p. 66°-67° C., and analytical figures corresponding with $C_{22}H_{44}O_2$, so that it is probably behenic acid, the melting point of which has been variously stated to be 73° C. (Völcker), 75° C. (Meyer and Jacobsen), and 80°-82° C. (Lewkowitsch), and that the exceptionally low melting point observed in this instance was due to a slight impurity. The chloroform extract (*b*) and the alcohol extract (*c*) of the resins yielded nothing of chemical interest.

In view of the difficulty of obtaining any quantity of the bark of *Brucea sumatrana*, and the fact that it contains a much smaller proportion of bitter principles than the fruit, it would appear that the latter is to be preferred for medicinal use.

At 1.12 the following paper was taken:

The Determination of Ferrous Carbonate.

By Philip H. Crewe.

Part I.—*The Determination of Ferrous Carbonate in Saccharated Ferrous Carbonate.*

Inconcordant results in assaying saccharated carbonate of iron being obtained by following the directions of the British Pharmacopœia, the author looked into the matter, and noted the observations on the subject by Squire, Coull, Liverseege, B. S. Proctor ("Manual of Pharmaceutical Testing"), Howie, and Hoyers. No specific directions were given in the B.P. 1885 for the use of warm phosphoric acid, and notwithstanding the published statements to the effect that heat should not be used, the 1898 edition directs that warm phosphoric acid is to be employed. The root of the difficulty is that cane sugar present in saccharated iron carbonate undergoes inversion into levulose and dextrose when treated with an acid, and the author finds that the presence of a trace of invert sugar seriously affects the accuracy of the test. The results of experiments with acids on cane sugar, as shown by Fehling's solution, were :

No.	Acid	Strength (by weight) of B.P. conc.	Time	Temperature	Amount of reduction of Fehling's
			Min.		
1	Phosphoric	66 per cent.	5	16° C.	slight
2	,,	,, ,,	10	,,	decided
3	,,	50 ,,	10	,,	none
4	,,	,, ,,	15	,,	slight
5	,,	,, ,,	5	30° C.	decided
6	,,	,, ,,	30	0° C.	very slight
7	Sulphuric	20 ,,	5	16° C.	slight
8	,,	10 ,,	10	,,	slight
9	Hydrochloric	,, ,,	10	,,	decided

Sulphuric and hydrochloric acids thus act more strongly than does phosphoric acid. Records of other experiments were given wherein the author mixed cane sugar with phosphoric acid or sulphuric acid, then added the ferrous solution and titrated with decinormal bichromate. Thus 1 gram of ferri carb. sacch. dissolved in 50-per-cent. phosphoric acid showed at 50° C. 35 per cent. of $FeCO_3$ in one minute, and at 16° C. 33.6 per cent. in twenty and thirty minutes. The same sample showed 34 per cent. with 10 and 25 per cent. sulphuric acid at 16° C. in ten and twenty minutes. These figures show that cane sugar does not appreciably increase the amount of bichromate used in titrating the iron, but when invert sugar was used the results were 2.5 per cent. of $FeCO_3$ too high, ferric salts being reduced by invert sugar. Experimental proof was also submitted of the statement that levulose is a much more powerful reducing-agent of iron-salts than dextrose. The author recommended the following method for the assay of the saccharated carbonate :

> Add to 1 gram of saccharated ferrous carbonate 10 c.c. of cold 50-per-cent. phosphoric acid (equal volumes of B.P. concentrated and water). Allow to stand for fifteen minutes, stirring at intervals. Dilute to about 70 c.c. with water and titrate with decinormal potassium dichromate. Each c.c. of the reagent is equivalent to 0.01159 gram of ferrous carbonate (oxygen = 16.00).

Part II.—*Determination of Ferrous Carbonate in Pilula Ferri.*

The use of standard bichromate for the assay of ferrous iron in these pills is generally believed to be attended with error. In Part I. the author proves that the interaction of cane sugar and bichromate is negligible, but that the presence of invert sugar does give too high ferrous results. He referred to the observations of Moerk and Gough, and described experiments of his own with the other organic constituents of pil. ferri. The effect of acacia and tragacanth is negligible, the increase of standard bichromate used being equal to 0.007 grain $FeCO_3$ in a 5-grain pill, but the glycerin in the pill accounts for an increase equal to 0.025 grain $FeCO_3$. Experiments were also made with pills prepared according to Lucas's and Vallet's formulæ, and the results showed that the total errors due to organic matter in these are :

> Pil. ferri, B.P., error equivalent to 0.6 per cent. $FeCO_3$ or 0.03 gr. per 5-gr. pill.
>
> Pil. ferri, Lucas' (with glucose), error equivalent to 0.4 per cent. $FeCO_3$ or 0.02 gr. per 5-gr. pill.
>
> Pil. ferri, Lucas' (with honey), error equivalent to 3.8 per cent. $FeCO_3$ or 0.19 gr. per 5-gr. pill.
>
> Pil. ferri, Vallet's (with honey), error equivalent to 4.0 per cent. $FeCO_3$ or 0 20 gr. per 5-gr. pill.

The error arising from organic excipients is overcome in the following method of assay, which gives very satisfactory results if carried out in the manner described :

> Take ten pills and, if the pills are coated, remove as much of the coating as possible without losing any of the pill mass. Break up in a mortar and transfer to a 200 c.c. measuring-flask, together with a little potassium bicarbonate, and warm gently with 30 c.c. of dilute sulphuric acid (10 per cent. by weight) until all the iron is in solution (the (liberated carbon dioxide will prevent oxidation of the ferrous sulphate). Cool and dilute to 201 c.c. (1 c.c. allowed for insoluble matter). Filter rapidly through a pleated filter, and to 100 c.c. of the clear solution add potassium bicarbonate until the liquid is of a deep-red colour, then add dilute sulphuric acid until this colour just disappears. Next add about 3 grams of potassium iodide and allow to stand in the stoppered flask for thirty minutes. Titrate the liberated iodine with decinormal sodium thiosulphate solution, each c.c. of which is equivalent to 0.1789 grain of $FeCO_3$ (oxygen = 16.00) present in the ferric state, and the amount thus found divided by four gives the amount per pill of ferric salt calculated as ferrous carbonate.
>
> To a further 50 c.c. of the above filtrate add solution of potassium permanganate carefully, until the addition of another drop produces a pink colour which does not immediately disappear. The iron will then be completely oxidised. Add potassium bicarbonate and follow the directions given in the first test. Determine the liberated iodine as before with sodium thiosulphate. The result gives the total iron, calculated as ferrous carbonate, and by subtracting that found in the first test the amount of ferrous salt, calculated as carbonate, is obtained.

Care must be taken that the potassium iodide used is free from iodate, as iodic and hydriodic acid react, and iodine is liberated, which would cause an error in the result. The coating may generally be removed from the pills by rolling between two smooth blocks of wood, when the outer cover will shell off. In cases where it is difficult to remove the coating the pills may be broken up in a mortar and then treated with dilute acid as before described. A little extra allowance will have to be made for the increased amount of insoluble matter.

Determination of Ferrous Carbonate in Capsules of Ferrous Carbonate.

Take five capsules and after cutting off the ends wash the contents into a 6 oz. wide-mouthed stoppered bottle with dilute sulphuric acid and chloroform. Add a little potassium bicarbonate (the carbon dioxide liberated will expel the air), and shake gently until all the iron is in solution. Titrate with decinormal potassium permanganate, each c.c. of which is equivalent to 0.1789 grain of ferrous carbonate (O = 16.00). Benzole may be substituted for chloroform if desired, as neither has any action on the permanganate. Ethyl ether and distilled petroleum ether, however, act on permanganate to an appreciable extent. This method was found to yield very satisfactory results, but the absence of interfering organic matter must, of course, be assured.

Part III.—*Determination of Ferrous Carbonate.*

This part was a comparison of the influence of certain organic matter when titrating ferrous carbonate with potassium dichromate. The last-named reagent has the advantage over permanganate in that it can be obtained in a greater state of purity, and its solutions keep well. It can also be used in the presence of hydrochloric acid, whereas permanganate is attacked by that acid unless certain precautions are taken. The tedious process of spotting with ferricyanide solution makes the process with dichromate compare unfavourably with the sharper end reaction with permanganate. It is generally supposed that permanganate is more readily attacked by organic matter than is the case with dichromate, but a series of tests showed that with cane-sugar as the organic matter dichromate is only slightly affected, but a considerable excess of permanganate is required. In the case of levulose, invert sugar, honey, and glycerol a much larger volume of dichromate than permanganate is required; with dextrose the error is equal, while glucose has a slightly greater action on permanganate than on dichromate. A standardised solution of ferrous sulphate was used in these experiments, and various measured quantities of the organic matter added, and the excess required of either reagent was determined. The rapidity of adding the reagent influences the amount registered. In a previous paper on saccharated carbonate of iron it was stated that in all probability the nascent ferric salt was attacked by the organic matter, and this statement is borne out by some of the experiments. The tests prove that with some organic substances permanganate is to be much preferred to dichromate.

The work for this communication was done in Messrs. J. Woolley, Sons & Co.'s analytical laboratories.

There was no discussion on this paper, but the President added compliments to the young author.

Mr. White then made rapid extracts of the following papers :

Medicinal Resinoids.

By D. B. Dott, Ph.C., F.I.C.

After referring to papers by A. R. Bennet and Cowie and Dickson, the author confirmed observations by them and others that nearly all the resinoids used in medicine generally contain added inorganic and sometimes organic matter. Gelsemin and hydrastin are most free from admixture, although as much as 20 per cent. of extraneous matter has been reported in hydrastin. There has been a tendency to regard these added matters as adulterations, but they are without doubt in the main justifiable additions. The principle is recognised in the official extract of euonymus, which contains one-fourth part of calcium phosphate. In every case it is noticeable that a dried extract of substances soluble in water and spirit has a tendency to absorb moisture, so that the particles of powder gradually cohere and form a solid mass. This is objectionable, and it is worth while avoiding it by the addition of a simple desiccant. The only question is as to the amount and kind of substances to be added, and published results show that there is room for improvement. The strength of spirit used in extracting must be considered : 70 per cent. alcohol removes much less useless extract than the official 45 per cent. Consequently euonymin containing 50 per cent. of extraneous matter may be as good as the B.P. preparation with only 25 per cent. Seventy per cent. alcohol is a good general strength of spirit to employ, and is suitable for the removal of all the active principles involved, whether alkaloidal salts, resins, glucosides, or neutral principles. Although the extracts vary in hgroscopic properties, the official proportion of 25 per cent. of desiccant is a good one, and might be adopted in every case, except in that of hydrastin, which does well enough at 10 per cent. As to mixtures for forming the dry abstract, the author has found one composed of eight parts each of calcium phosphate, sugar of milk, and dried sodium sulphate with one part magnesia answer very well. For hydrastin he prefers sodium phosphate alone. The green extracts were supposed presumably to be made from leaves, but it may be doubted whether they are usually so made. There would be no object in preferring leaves to other parts of the plant as a source of resinoid. They yield more extract than the bark or root, but it is more difficult to dry.

The Properties of Antimonium Sulphuratum, B.P.

By David Lloyd Howard and J. Bristowe P. Harrison, F.I.C.

In the preparation of this substance on a manufacturing scale, although fully convinced that the "official" details have been faithfully carried out, the authors have never succeeded in obtaining a product that would satisfactorily conform to the tests laid down in the British Pharmacopœia. The residue after treatment with nitric acid, instead of weighing "about 2 grams," is never more than 1.75 gram. An experimental batch (one-fourth of B.P. quantities) yielded only 1.66 gram of residue, or a deficiency of 17 per cent. on the official limit. Thinking that the composition of the antimony sulphide used might account for the discrepancy, it was analysed, but the total impurities were found to amount only to about 2 per cent., the figures being : Antimony sulphide (Sb_2S_3), 97.82 ; lead sulphide, 0.41 ; iron sulphide, 0.75 ; nickel sulphide, trace ; moisture, etc., 0.93.

From these results the authors could only conclude that the "official" figure for residue is much too high, and, in order to confirm their opinion, they obtained samples from two other manufacturers, "A" and "B." On treating 3 grams of each of these with nitric acid and igniting the residue, "A" gave 1.62 gram and "B" 1.68 gram. The residue obtained from "B" had an abnormal appearance, and on treatment with water it was found to contain a very large percentage of sodium sulphate, suggesting either very careless preparation or gross adulteration. The soluble salts in the sample the authors themselves had made experimentally contained 9.6 per cent. of soluble salts, and sample "B" 51.6 per cent. The latter consisted almost entirely of sodium sulphate, while their own make gave the merest indication of sulphates. "A" was a carefully made preparation. Notwithstanding the fact that, in the preparation of sulphurated antimony, the British Pharmacopœia directs the final product to be washed with distilled water till free from sulphates, in describing the "characters and tests" of this substance, no mention whatever is made of a qualitative test for sulphates. Without this qualification wholesale sophistication is possible, although the amount of residue may be very close to that from a genuine article. Anyone who has tried the B.P. test, which states that antimonium sulphuratum is "readily dissolved by solution of sodium hydroxide," cannot have failed to realise that the test, as there stated, is impossible, for invariably a precipitate is produced. Ordinary antimony sulphide readily dissolves in caustic soda solution, but sulphurated antimony is, for all practical purposes, a mixture of the two sulphides of antimony with a large excess of sulphur. On treatment with caustic soda solution this reacts with the sulphur to form sodium polysulphide and sodium thiosulphate ; these in turn react with the mixture of antimony trisulphide and excess of sulphur, and this sodium thioantimonate in solution is obtained and sodium metantimonate is precipitated. These reactions are represented by the following equations :

$$6NaHO+12S=2Na_2S_5+Na_2S_2O_3+3H_2O.$$

$$8Sb_2S_3+4S+2Na_2S_5+Na_2S_2O_3+30NaHO$$
$$=6NaSbO_3+10Na_3SbS_4+15H_2O.$$

Experiments tend to confirm this explanation of the formation of the precipitate. The authors accordingly conclude that their investigation shows :

> 1. That three grams of antimonium sulphuratum will not yield two grams of residue by means of the test described in the British Pharmacopœia.
> 2. That it is possible for a sample to contain as much as 30 per cent. anhydrous sodium sulphate and still yield a residue figure very close to that obtained from a genuine and carefully prepared sample.
> 3. That sulphurated antimony is not readily dissolved by solution of caustic soda.

They suggested that the "characters and tests" enumerated in the B.P. monograph should be thus modified :

> *Characters and Tests.*—An orange-red powder, readily dissolved by hot hydrochloric acid, with the evolution of hydrogen sulphide and the separation of sulphur. On treatment with hot water and filtering, the clear solution should not contain more than a trace of sulphates. Three grams moistened with dilute nitric acid and warmed with successive portions of fuming nitric acid until red fumes cease to be evolved, then evaporated to drive off excess of water, and carefully heated to redness to expel sulphuric acid, should leave a whitish residue, weighing not less than 1.6 and not more than 1.8 grams. Sulphurated antimony should not yield more than the slightest characteristic reactions for arsenium when tested with stannoris chloride.

False Calumba-root.

By S. Taylor, Ph.C.

Mr. E. M. Holmes submitted to the author a sample of a sliced root, which had been detected by a London wholesale house mixed with calumba-root in small percentage. It had not the characteristic bitter taste of calumba, and Mr. Holmes desired, if possible, to detect the adulterant in powdered calumba, should such adulteration occur. The sample examined measured 6.5 cm. long, 3 cm. broad, and 0.5 to 0.9 cm. thick (fig. 1), and had been cut from a root of diameter 0.5 cm. in a very slanting direction. In general appearance it much resembled poor qualities of calumba, but it has a brownish-red appearance, which is striking, and pervades all parts of the root, especially the central parenchyma. This

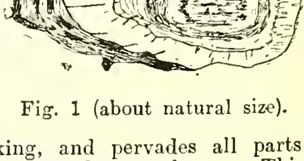

Fig. 1 (about natural size).

distinguishes it from calumba. Under the lens minute crystals are observed. It has a somewhat thick cork of a dark-grey colour. The central depression of the slices is not as marked as in calumba, and under the lens is seen to be more densely and markedly radiate. The general microscopical characters of the root are closely akin to those of calumba in the type, disposition, and extent of the bast and wood-bundles, medullary rays, etc. As in calumba, starch is very plentiful, and the grains are about the same size—*i.e.*, twenty to sixty, or even more, the majority being about thirty (fig. 2*a*). The hilum of the grains is, however, different from that of calumba-starch (fig. 2*b*) and is less distinct. The crystals of calcium oxalate are a distinguishing feature of the root and exist in two forms—as acicular raphides (fig. 3), large and numerous, and as rosettes (fig. 4) 50 mm. to 70 mm. in diameter. They are distributed through all parts of the root. The colouring-matter, of a brownish-red colour, is also present throughout the root, and is extremely plentiful. It gives a deep red colour with solution of potash, and with solution of ferric chloride it turns black. These two latter facts are sufficient to distinguish the false root from the true :

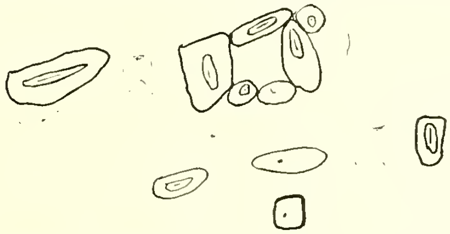

Fig 2 *a*. Starch of false calumba (× 500 diam.).

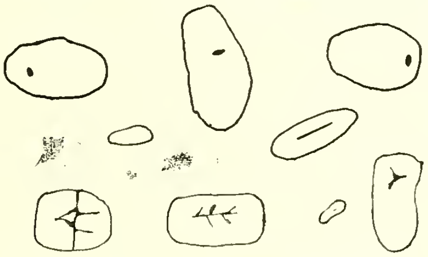

Fig. 2 b. Starch of true calumba (× 500 diam.).

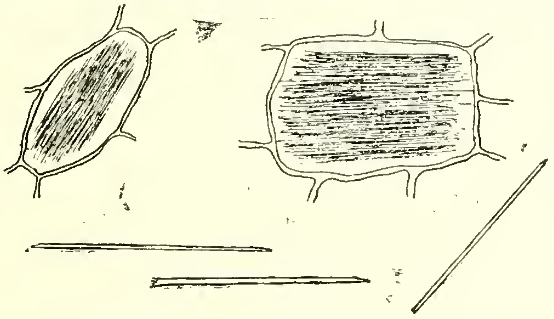

Fig. 3. Acicular crystals (× 500 diam.).

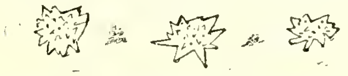

Fig. 4. Sphœraphides (× 500 diam.).

(*a*) The presence of sphœraphides and acicular raphides, and the absence of the isolated crystals which are found in the large stone cells of calumba.

(*b*) The presence of red colouring-matter and the absence of yellow colouring-matter.

The author also referred to a peculiar differentiation of certain cells beginning in the cortical parenchyma near the periphery, which become thickened to a considerable extent without lignification, and in the final state of development results in a large and irregular circle of corky tissue enclosing a mass of brownish-black colouring-matter (fig. 5).

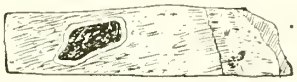

Fig. 5. Corky tissue (nat. size).

Strands of axially elongated schlerenchymatous cells traverse the root at irregular intervals.

The two samples of root submitted yielded 5.2 per cent. and 6.8 per cent. of ash respectively. The tincture prepared from the root with 60-per-cent. alcohol was of a bright red colour, gave a brownish-red precipitate, a slightly yellow filtrate on treatment with acids, and yielded 2.05 per cent. of extractives. No alkaloid could be detected. The petroleum-ether extract yielded a minute quantity of acicular crystals.

Ext. Fuci Vesiculosi Liq.

By F. C. J. Bird.

This B.P.C. Formulary preparation is supposed to owe its efficiency to iodine. A sample was returned to the author with the complaint that it contained none, and on testing it in the ordinary way it seemed so, but he found evidence of it when tested thus :

> Evaporate a few c.c. of the liquid extract to dryness and carbonise at as low a temperature as possible. Treat the residue with a little boiling water, filter, acidify strongly with acetic acid, and add a few drops of solution of hydrogen peroxide. This liberates the iodine after standing for a short time, and if chloroform be added the iodine dissolves to a rose-violet solution, which readily affords the starch reaction.

After a few appreciative words to the writers of these papers in the President's most graceful and courteous manner, the scientific portion of the proceedings terminated at 1.20 P.M.

The Penultimate Stage.

The President said he would like, at that point, to mark his sense of the delightful and happy connection he had had with the British Pharmaceutical Conference by asking Mr. Woolley's acceptance, on behalf of the same Association, of a beautiful framed photograph of a well-known picture, "British Men of Science in 1807," of which the central figure was one of whom Mr. Woolley had personal associations—he referred to Dr. John Dalton. (Hear, hear, and cheers.)

Mr. Woolley thanked the President for the photograph and for the allusion made, in presenting it, to his (Mr. Woolley's) connection with Dr. Dalton. He had recollections, as a boy, of Dalton, and for 30 years resided in the house of a great uncle, not half a mile from the place where they were assembled. He had many reminiscences of the great man, with which, had time permitted, he might have entertained them, but he could do no more than say that he accepted their handsome gift, which would ever be gratefully appreciated.

The "Bell and Hills" Fund.

The President said they had now reached the final stage of the Conference of 1907, and it became his duty to make the presentation, provided by the Bell and Hills Fund, of a "number of books to the Pharmaceutical Library of Manchester." The books selected by the Manchester Pharmaceutical Association are the United States "Pharmacopœia," Sutton's "Volumetric Analysis," Greenish's "Food and Drugs," Greenish's "Microscopical Atlas," "National Standard Dispensatory," the German "Pharmacopœia," Caspare's "Pharmacy," and Hale White's "Pharmacology."

The President added that the Manchester Pharmaceutical Association compares with any other association in the kingdom for the interest its members took in scientific pharmacy. He had therefore great pleasure in asking Mr. G. C. Woolley, its President, to accept, on its behalf, the books which lay upon the table. (Cheers.)

Mr. Woolley expressed the great indebtedness of the Association he represented to the Pharmaceutical Conference for the gracious and most liberal gift. He hoped this addition to the library would interest the members and induce the younger ones to make fuller use of the library and of the means of information at their disposal. (Cheers.)

Votes of Thanks.

Mr. W. F. Wells (Dublin) proposed a vote of thanks to the Local Committee and to the Ladies' Committee for the admirable arrangements made by them for the comfort and enjoyment of the members. Without seeming invidious, he said he might mention in that connection the hero of Manchester pharmacy, Mr. G. S. Woolley, President of the Local Committee—(cheers)—Mr. Kemp, Chairman of the Executive—(cheers)—Mr. Pidd, Hon. Treasurer; and last, but not least, Mr. W. Kirkby, the Hon. Local Secretary, whose powers of organisation were unsurpassed. (Hear, hear, and cheers.) Mr. W. L. Curry seconded the motion, which was carried unanimously.

Mr. Woolley, in acknowledging the vote, expressed the satisfaction which he said was felt by the committee in hearing that their efforts had been so successful. The brunt of the work had fallen upon Mr. Kirkby, than whom he never met a man who was so great a master of organisation. (Hear, hear, and cheers.) The Conference of 1907 would be looked back upon by all with deep satisfaction. (Hear, hear.) Mr. Kemp and Mr. Kirkby also acknowledged the vote of thanks. The latter gentleman, who was warmly cheered, said that every member of the committee had worked loyally and heartily and with an earnest wish that the Conference would be as enjoyable as possible to all the members. (Cheers.)

The Conference of 1908.

Mr. Giles (Aberdeen), on behalf of the pharmacists of Aberdeen and the North of Scotland, cordially invited the Conference to meet next year in the granite city. He pointed out the leading attractions of Aberdeen, not the least of which, he said, were the University and Marischal College, of which as seats of learning all Aberdonians were proud. The city was within easy reach of some of the finest scenery in Britain. (Cheers.)

Mr. Hay (Aberdeen) supported the invitation. Twenty-two years, he said, had elapsed since the Conference last visited Aberdeen. During that period many changes had taken place. The city had grown enormously, but the hearts of the people were the same, and they could give the Conference a not less hearty welcome than on their last visit. (Cheers.)

Mr. Kay added a few words to the same effect.

Mr. W. A. H. Naylor then moved that the Conference accept the invitation so cordially given to it to meet next year at Aberdeen. Not a word, he said, was needed after the expressions which had fallen from the various speakers to commend that resolution to the acceptance of the Conference. (Hear, hear.)

Dr. Walsh (Dublin) seconded the resolution, which the Chairman put to the vote, and it was carried unanimously amidst cheers.

Election of Officers.

Mr. G. Claridge Druce moved the adoption of the following list of officers for the ensuing year:

President, Mr. Robert Wright, F.C.S. (Buxton); Vice-Presidents, Messrs. F. Rymer Young (Warrington), George Lunan (Edinburgh), F. Ransom (Hitchin), W. Giles (Aberdeen), Dr. Walsh (Dublin), and Prof. Greenish (London); Hon. Treasurer, Mr. J. C. Umney; *Hon. Gen. Secretaries*, Mr. E. Saville Peck and Mr. Edmund White; *Hon. Local Secretary*, Mr. William Reid (Aberdeen); *Executive Committee*, Messrs. Alcock, Finnemore, Gilmour, E. F. Harrison, J. S. Hills, D. Lloyd Howard, Kirkby, J. F. Tocher, and Dr. W. H. Martindale; *Auditors*, Messrs. J. W. Bowen and W. Prior Robinson.

The motion was seconded by Mr. T. H. W. Idris, M.P., and unanimously adopted.

Mr. Wright (Buxton), the newly-elected President, was cordially received on rising to acknowledge his election. He said the honour was one which he had neither sought nor anticipated. He was prepared to have worked on for another ten years "as a hewer of wood and drawer of water"—glad only to be of any service to the Conference which represented the life and soul of British pharmacy. (Cheers.) He expressed a hope that the Conference next year would not be behind any previous one in interest and success. (Cheers.)

Thanks to the President.

Dr. Symes moved that a cordial vote of thanks be given to the President (Mr. Tyrer) for the able manner in which he had fulfilled the duties of his office during the past year. The motion was seconded by Mr. G. S. Woolley and unanimously carried. This concluded the business of the Conference.

Those who attended the Conference.

Adcock, J. H., Liverpool
Alcock, F. H., and Mrs., Birmingham
Allan, J., and Mrs., West Didsbury
Allman, J. D., Ealing
Antcliffe, H., and Mrs., Sheffield
Appleton, J. T., Sheffield
Arnfield, J. C., Stockport
Ashton, F. W., Croydon
Bagshaw, H., Oldham
Bailey, E. H., Manchester
Balmforth, A., Whalley Range
Bannerman, R., Edinburgh
Barlow, A. H., Romiley
Barron, W., Cheltenham
Bates, F. W., Brooks's Bar
Peacock, J. H., Leeds
Beard, J. H., Manchester
Beggs, G. D., Dalkey
Bell, J., Manchester
Benger, F. A. B., Strangeways
Bennett, R. R., London, S.W.
Bentley, T., Stoke-on-Trent
Bilson, F. E., Bournemouth
Birtwistle, A., Northwich
Black, H. M., Brighton
Blackburn, A. E. H., and Mrs., Manchester
Blain, A. L., Manchester
Blain, W. R., Bolton
Blayney, W. H., Haslingden
Blore, M., Manchester
Blyton, T. B., Manchester
Boorne, H. E., Bristol
Booth, Dr. W. G., Manchester
Bourdas, I., and Miss, London, S.W.
Bowen, J. W., London
Boys, F. A., Manchester
Branson, F. W., and Mrs., Leeds
Breese, J. S., Rusholme
Bremridge, R., London
Brewis, E. T., Leyton, Essex
Brooks, J., Hale
Brown, C., Manchester
Burford, S. T., Leicester
Burgess, A. H., and Mrs., Altrincham
Cannon, E., Manchester
Carr, P., Sheffield
Cave, J. R., Southport
Chalmers, W., London
Chapman, R. S., Donegal
Clague, T. M., and Mrs., Newcastle-on-Tyne
Clarke, R. Feaver, and Miss, Gravesend
Clegg, J, Mrs. and Miss, Swinton
Clementi, Miss May, Hulme
Cleworth, J., Manchester
Cocker, J. D., Manchester
Cofman, J., London
Cooper, G. H., Failsworth
Cowie, W. B., Edinburgh
Cowley, R. C., Liverpool
Crewe, P. H., Stockport
Crisdale, R. N., and Mrs., Oldham
Crompton, H., Bury
Currie, W. L., Glasgow
Cuxson, J., Birmingham
Dallow, C. E., Birmingham
Dickson, D., Clayton
Dolbear, J., Oxford
Dolbear, Percy, Oxford
Downes, W. F., Altrincham
Druce, G. C., Oxford
Drysdale, J. W., London, E.C.
Duncan, A. W., Pendleton
Duncan, W., Edinburgh
Dunning, J., Ventnor
Edwards, R. G., Fallowfield
Evans, Sir E., Liverpool
Evans, J. H. S., Liverpool
Evans, J. N., Liverpool
Finnemore, H., and Mrs., London, S.E.
Fish, W., Chorlton-cum-Hardy
Fishenden, R. B., Manchester
Forbes, R. T., Edgeley, Stockport
Fowler, Dr. and Mrs., Urmston
Francis, A., London, S.E.
Franklin, J. H., and Mrs., Manchester
Fraser, A., Paisley
Gadd, H. W., Exeter
Garnett, H., Manchester
Gartside, C., and Miss, Oldham
Gibson, F., Hulme
Gibson, H., Lee House, Sale
Gifford, R. L., Mrs. and Miss, Blackburn
Gilbert, J. A., Manchester
Giles, W., Aberdeen
Gilmour, J. P., Glasgow
Grier, J., Manchester
Gunn, A., London
Haddock, J., Liverpool
Hall, Mrs. E., Whaley Bridge
Hamilton, T. S., Pendleton
Hanson, A., Bradford
Harkness, J., Edinburgh
Harland, R. T., Hale
Haugh, R., Manchester
Haworth, H., Levenshulme
Hay, W. F., Aberdeen
Hearn, J., London
Hershberg, A., Manchester
Heath, —, Manchester
Hewitt, S., Ashton-under Lyne
Hill, J. Rutherford, Edinburgh
Hills, J. S., London
Hobbs, A. E., and Mrs., Tunbridge Wells
Hope, J., Manchester
Hoseason, J. H., Manchester
Howard, D. Lloyd, London

Howard, H., Manchester
Howie, W. L., London
Hughes, W. G., Manchester
Idris, W. T. W., London
Innes, D., Stalybridge
Jackson, J. G., Sheffield
Jackson, J., Bradford
Jeans, A., Manchester
Jeans, E., Manchester
Jeans, T. R., and Miss, Pendleton
Johnston, C. A., Manchester
Johnstone, E. S., Manchester
Jowett, Dr. H. A. D., London
Kay, J. P., Aberdeen
Kelly, P., Dublin
Kelly, T., Dublin
Kemp, H., Mrs., and Miss, Chorlton-cum-Hardy
Kerfoot, T., Ashton-under-Lyne
Kidd, J., Banff
Kidd, J. C., Manchester
Kirkby, W., and Mrs., Manchester
Knott, H., Bolton
Knott, P., and Mrs., Bolton
Lane, W., and Miss, Manchester
Leach, F. H., Oxford
Lees, J., Oldham
Lenton, W. H., and Mrs., Long Melford
Lester, J. H., Manchester
Levi, C., Higher Broughton
Levinstein, I., Liverpool
Lewis, A., Pendleton
Lewis, D., Pendleton
Lindsay, R., and Mrs., Peebles
Little, Miss, Manchester
Lord, W., Gorton
Lunan, G., Edinburgh
Maben, T., London
Macfarlane, M., Forfar
McMurray, J., Helensburgh
McWalter, Dr. J. C., Dublin
Makepiece, A. B., Sydenham
Mallinson, G. A., Withington
Marsden, E. G. L., Flexton
Martindale, Dr. W. H., and Mrs., London
Mather, J. H., Godalming
Matthews, W., Manchester
Merry, E. Lee, Manchester
Middleton, A., Nottingham
Middleton, C., Manchester
Miller, T., Whalley Range
Moore, W., Assam
Naylor, W. A. H., London
Nicholl, I. W., Belfast
Nicholson, Miss, Altrincham
Nidd, J. H., Manchester
Nottberg, Dr., Manchester
Oldfield, H. K., Manchester
Orrell, W. P., Stockport
Parsons, W., Beckenham
Peck, E. S., and Mrs., Cambridge
Pentney, J. C., London
Phillips, J., Wigan
Phillips, J. J., Ashton-under-Lyne
Pidd, A. J., and Miss, Manchester
Pinchbeck, G., London
Pirie, F. G., London
Poole, J., Birmingham
Pratt, G. W., Mrs. and Misses, Manchester
Procter, H. R., London
Quant, E., Torquay
Radcliffe, L. G., Old Trafford
Ransom, F., Hitchin
Ratcliffe, S., Southport
Rees, R. P., Dowlais
Reynolds, J. L., Manchester
Righton, J., Southport
Reynolds, R. J., Mrs. and Miss, Manchester
Ringer, F. A., Manchester
Roberts, H., Romiley
Roberts, W., Stockport
Robertson, A. H., Didsbury
Robinson, C. E., Brighton
Robinson, F., Manchester
Robinson, W. Prior, Clapham Common
Rose, J., and Mrs., Urmston
Rowland, G. H. C., and Mrs., Edinburgh
Sargeant, F. P., Leeds
Savage, W. W., Brighton
Shacklady, J., Liverpool
Shackleton, T., Oldham
Silson, R. W., Bradford
Simpson, A., Stalybridge
Singlehurst, J., Manchester
Skirrow, F. J., and Miss, Westhoughton
Slack J. L., Levenshulme
Smiley, J. A. R., and Mrs., Pendleton
Smith, A., Sale
Smith, A. R., Manchester
Smith, F. A., Birmingham
Smith, J., Dublin
Smith, J. L., Pendleton
Solomon, A. H., London
Steward, J. A., Worcester
Stones, L., Manchester
Sumner, J., Manchester
Sutherland, J. W., Glasgow
Swinglehurst, J., Pendleton
Swinn, C., Hulme
Symes, Dr. C., Liverpool
Taylor, C. S., London
Taylor, H., Marple
Thomas, J. A., Cheltenham
Thompson, E., Liverpool
Thomson, W., Manchester
Thorpe, E. F. W., Moss Side
Travis, H. A., Didsbury
Turney, J. D., Plymouth
Twivey, A., Birmingham
Tyrer, T., London
Tyson, J., Whalley Range
Umney, J. C., and Mrs., London
Vallance, A. C., and Mrs., Eccles
Wallis, T. E., and Mrs., Tunbridge Wells
Walsh, Dr. J. A., Dublin
Walters, E., and Mrs., Oldham
Walton, J. W., Manchester
Want, P. W., and Mrs., London
Wardle, Sir T., Leek
Watkinson, H. A., Farnworth
Weld, C. C., London
Wells, W. F., Mrs. and Miss, Dublin
West, H. T., Manchester
Westmacott, G. L., Manchester
Whitaker, R., Chorley
White, E., and Mrs., London
Wild, J., and Mrs., Manchester
Wild, S., Macclesfield
Williams, G. A., Manchester
Williams, H. G., Sheffield
Wilson, W. P., Haddington
Woodruff, H., Manchester
Woodruff, T., Withington
Woodruff, W., Cheadle Hulme
Woolley, E. J., Manchester
Woolley, G. S., and Miss, Manchester
Woolley, S. W., London
Worfolk, G. W., Ilkley
Wright, R., and Mrs., Buxton
Wyatt, H., Bootle
Wyatt, W., and Miss, Manchester
Young, J. R., Warrington

Mancunian Musings.

The enterprise of Mr. Cleworth, chemist-photographer, in taking pictures in all sorts of places and all sorts of conditions was a feature of the Conference. The fact that some of the photographs are included in this number of THE CHEMIST AND DRUGGIST, which had to go to press a day earlier than usual, is a proof of the smartness of the work. Special arrangements were made by which the negatives were developed and printed and despatched to London, and within a very short time the engravers produced the blocks which are printed from in this issue.

⁂

The change of times for the sessions of the Conference seems to answer well, but was rather a tax on endurance. It was thought that the members would not bo sufficiently enthusiastic to remain in the room from 9.30 to 2 P.M., but, with the exception of the departure of the ladies after the President's address, the attendance was well maintained. The opening proceedings on Tuesday were briefer than is often the case, and consequently the programme of papers was kept fairly well up to time.

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The ladies enjoyed their visits in the city on Tuesday morning. The handsome woodwork of the choir stalls were much admired—at least as much as the perennial gloom would allow. The electric light is being installed, and may throw a new light on the beautiful interior. The fine Rylands library, which Mrs. Rylands built, furnished with books, and endowed in memory of her husband, is where the famous Althorp library is housed. The acquisition of this collection placed the library in the front rank from its very commencement. The quaintness of Chetham's Hospital (a boys' school endowed by Humphrey Chetham in 1653), which was built in 1425, took the fancy of all those who visited it, although some were heard to express a preference for a modern house with up-to-date conveniences

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A handsome guide-book of over 200 pages was presented to each visitor to the Conference. It is a book $8\frac{1}{2}\times5\frac{1}{2}$, entitled "Manchester of To-day," by Mr. C. W. Sutton, M.A., the Chief Librarian of the City of Manchester. The book was originally prepared for presentation to the members of the British Medical Association in 1902, but has been revised and brought up to date. It is divided into sections dealing with Manchester in its various aspects. There are forty-three half-tone illustrations and a map of Manchester and the district. Two of the photographs—of the Public Health Laboratory, University—were taken by Mr. J. Cleworth, chemist and druggist, Manchester. The book forms a capital souvenir of the Conference visit.

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The Garden Party at Buile Hill Park on Wednesday afternoon was a great success. The weather was dull, but fair, and there were about 2,000 present. There were two bands and a variety entertainment in various parts of the beautiful grounds. The *C. & D.* photographer was very active. The Mayor of Salford is entertaining 2,000 children in the same place on Thursday.

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There were nearly a hundred Conference visitors staying at the Midland Hotel, the rest of those from a distance residing with friends in the neighbourhood. Many of the late-comers have had beds made up in sitting-rooms rather than go away from the headquarters. There are over six hundred bedrooms, but the popularity of the hotel is such that it fills up almost every night of the week.

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An interesting feature of the Conference was the personal friendship with which several of those who attended regard Mr. Thomas Tyrer. The Mayor of Salford (Alderman Frankenburg) referred to the President as a "good friend whom I have known for a quarter of a century." Sir Thomas Wardle and Mr. Ivan Levinstein, who were present on Tuesday during the reading of the address, are also old friends of Mr. Tyrer. Dr. Martindale affectionately spoke of having known Mr. Tyrer "ever since I was a little kid," and as one looked at the good doctor's tall and well-nurtured figure one felt that that must have been a long friendship.

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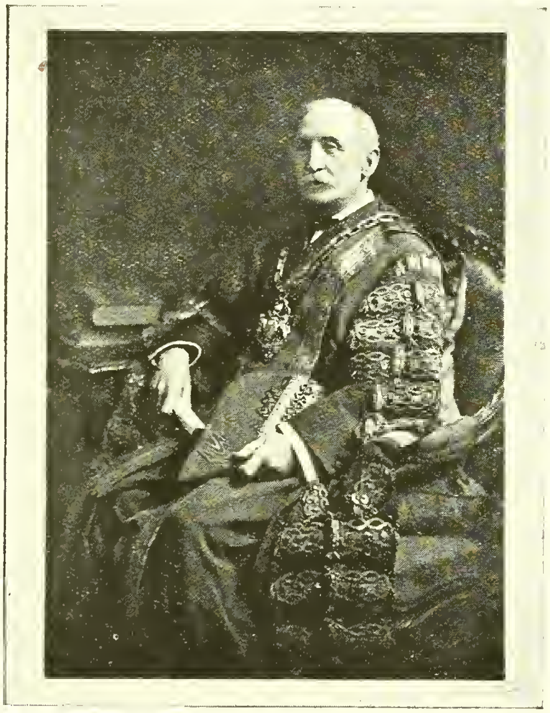
Many marvelled at the extraordinary industry and ability displayed in the compilation and arranging of the paper by Dr. W. H. Martindale. The number of exhibits that were passed round the room were eagerly scanned, and albums of labels from the various countries of the earth were also objects of critical interest. It should be noted that the President was showing samples of cyanamide and other products of atmospheric nitrogen utilisation. Some of these are soon to be placed on the market at prices which will compete with Chilian saltpetre. Mr. Tyrer also brought two old folio volumes of Zwelferi's "Pharmacopœia Augustana," dated 1675. These old books, in original parchment covers, are of much interest to the collector, as they have very fine engraved frontispieces. The books are a commentary in Latin on the Augustan Pharmacopœia.

* * *

The "Manchester Courier" thus describes the ladies' dresses at the reception on Monday night at the Town Hall: The Lady Mayoress wore an exquisite gown of white net pailletté, with aluminium sequins and hemmed with mauve silk, and she carried a bouquet of carnations. Miss Harrop was in a dainty dress of ring-stopped net, with touches of pale blue velvet on the bodice, and her bouquet was of pale pink carnations. Mrs. T. Tyrer looked well in a gown of black lace over white glace, and Miss Tyrer was also in black with sequin trimmings. Mrs. I. Frankenburg was handsome in black embroidered net and fine black lace, and Miss Frankenburg wore white ninon and black filet lace. Mrs. J. H. Thewlis wore a beautiful robe of white lace with gold and silver embroideries, and belt and sash of chiné silk. Mrs. Rothband was distinguished in black chiffon velours and duchesse lace, and Miss Rothband was in white ninon and lace. Mrs. Mandelburg wore black embroidered crêpe de chine, and Miss Mandelburg white ninon with leaf trimming of eau de nil silk. Mrs. Merton Frankenburg's dress of cobweb net was hemmed with turquoise velvet and trimmed with blonde lace, and Mrs. Dreschfeld appeared in black and white satin-striped chiffon. The Mayoress of Stockport wore an exquisite gown of jewelled net, with entre deux of silver and mother-of-pearl bugles. The Mayoress of Southport was in rich cream lace, with touches of mauve. Mrs. W. Hoy's gown of embroidered chiffon was inlet with guipure lace motifs, and Mrs. A. Hoy was in white ninon. Mrs. Hamill wore fawn voile and guipure lace, Mrs. Lancashire was in brown crêpe de chine, and Mrs. Emrys Jones in mauve-and-white striped ninon, with berthe of point lace. Mrs. Reynolds was graceful in white satin mousseline, Mrs. G. H. Walker wore cream-coloured Valenciennes and guipure lace over black silk, and Mrs. Knudsen was in sea-green chiffon taffeta and French lace. Mrs. Ford Smith's gown of grey-and-white striped ninon was trimmed with bugle embroideries. Mrs. Boyle was in reseda taffetas, and Mrs. Hopkinson in black net inserted with fine white lace.



Mayor of Salford (Mr. Frankenburg).

* * *

"Aren't they doing it well?" was the universal appreciation and question as friend met friend. This tribute to the excellent organisation which produced so much enjoyment to all at the Conference was indeed well merited. The grand concert on Tuesday evening was voted as by far and away the finest thing in entertainments of that kind ever placed before any Conferencer. Over four hundred were present, including the Lord Mayor and Lady Mayoress of Manchester and the Mayor and Mayoress of Salford, each with a party of friends. The music was of the best class, and the talent engaged did full justice to the music. Mr. J. H. Franklin, of Messrs. Woolley's staff, has become an established favourite at these functions, and his singing was most enthusiastically received. "Woolley's" is strong in musical talent, for Mr. A. C. Vallance, a director of the company, proved himself likewise a finished artiste. He sang "Si tu savais" to the manner born.

* * *

The rest of the artistes were professionals, particular appreciation being reserved for the harp and violin duet of the Misses J. and L. Harrison. Madame Annie Walker, Mr. Fowler Burton, and Mr Webster Millar also contributed songs and duets, and Mr. Olley Oakley gave several acceptable banjo selections in quite a new and not at all ordinary style. A feature of the entertainment was a fantasy in one act, "Shades of Night," played by four clever professionals in the "Theatre," or "Midland Hall," in which the scientific meetings were held during the day. The concert was resumed after the fantasy ended, and it lasted until 11.30 P.M., when an adjournment was made by a fairly large company to the ballroom, and dancing was indulged in until 2 A.M. to the strains of Herr Drescher's orchestra. Messrs. E. S. Johnstone, J. H. Franklin, and G. L. Westmacott were the M.C.s.

Mayoress of Salford (Mrs. Frankenburg).

* * *

The report of the Conference proceedings in one of the local papers caused considerable amusement and some consternation to a Northern pharmacist. The intelligent reporter, acting on Lord Curzon's advice, gave "an intelligent anticipation of events before they occur." Mr. J. P. Gilmour's paper was said to have been read on the first day, a brief abstract was given, and the importance of the communication was emphasised in a leader. The same enterprising journal (which is apparently one of the Harmsworth school) referred to Mr. Wallis's paper as "The Examination of *Chronic* Anhydride and its Solutions."

* * *

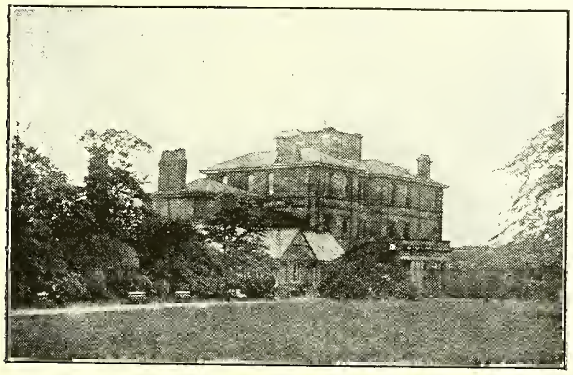
The headquarters of the Conference are at the Midland Hotel—one of the finest guest-houses in Great Britain. It is a veritable marble palace, and the singularly good taste of the furnishing gives an air of comfort and welcome which is often wanting in large hotels. When one has mastered the plan of the building and grasped the many facilities offered to visitors, it is plain sailing, although tales are told of weary travellers being lost in the labyrinth of corridors and public rooms.

The local committee has been splendidly organised. Every train was met by sub-committees, and visitors were piloted to their hotels or put in the way of arriving there in the shortest time. Each member of the Reception Committee has charge of a given number of visitors, and will keep them in tow till the end of the week. There is an office for the Committee in the Midland Hotel, and Mr. Kirkby, somewhat worried by the glut of work, tries all day to answer half-a-dozen inquiries at once. A slight shortage of tickets for the Lord Mayor's reception was due to a miscalculation of the number required, but by a judicious use of double tickets everybody managed to gain admission to the Town Hall on Monday night.

The First Arrivals. *Photo, Cleworth.*
Mr. Pidd (in white hat) went to meet Mr. Naylor (with the "topper").

⁂

A somewhat jaded and hungry crowd of Conferencers gathered for luncheon—an excellent one it proved—at two o'clock on Tuesday in one of the dining-rooms of the hotel. Parties were seated at small tables all over the large hall, and it proved a merry, as it certainly was an appreciated, repast. There was no speechmaking, but a few announcements about the sightseeing were given by the Secretary.



Buile Hill Park. *Photo, Cleworth.*

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In the afternoon of Tuesday private electric tramcars—chartered specially for the purpose—conveyed parties to the City Electricity Supply Station, to the City Fire Brigade Station (where there was a fine display by the Fire Brigade), the Municipal School of Technology, Messrs. R. Haworth & Co.'s cotton mills, the Acme Spinning Co.'s cotton mills, and one of the largest home trade warehouses in Manchester—that of Messrs. S. & J. Watts & Co.

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Five o'clock tea was provided at the Victoria University in the magnificent Whitworth Hall, where the majority of the Conferencers were received by the Vice-Chancellor and Mrs. Hopkinson. This proved the most interesting extra-pharmaceutical function of the day. After tea the Vice-Chancellor spoke a few words of welcome to his visitors. He referred specially to the pharmaceutical department which had been made a feature of the University by the late Dr. Leech, a name well known in pharmacy. He handed over the visitors to Professor Wild, Dr. Leech's successor. Professor Wild also welcomed the visitors in a short speech, in which he said that the practice at Victoria University is to teach pharmacy concurrently with medicine and chemistry. That system had proved of mutual advantage to students of pharmacy, chemistry, and medicine. Their aim was also to follow out the precepts laid down by Mr. Tyrer in his paper, and to endeavour to advance the cause of science by research. Professor Wild and Mr. James Grier then conducted parties all over the University buildings, special visits being paid to the museum, the chemical laboratories, and lecture-rooms (where medallions of Frankland and Roscoe adorn the walls), the pharmaceutical department, and the pharmacological laboratory. We gave a photograph of the pharmaceutical department in a recent number, and Mr. Grier explained all the details and advantages of his department to the visitors who crowded his rooms. The tintometer used by Professor Wild in his paper to the Conference on "Calamines" on the following day was the object of considerable curiosity. A well-known Birmingham pharmacist explained (*ex officio*) the working of the instrument to interested groups, while upstairs Professor Wild, in his domain of pharmacology, showed the details of a research he is conducting in the therapeutic standardisation of drugs.

Photo, Cleworth.
Head Fire-station, London Road.

Manchester Cathedral. *Photo, Cleworth.*

The Federation of Pharmaceutical Associations.

THE Federation held its annual meeting, on the afternoon of Tuesday, in the Midland Hall, Midland Hotel, Manchester. Mr. W. L. Currie, of Glasgow, presided over a gathering of about twenty gentlemen from London, Edinburgh, Glasgow, Aberdeen, Sheffield, and other centres. The members of the committee present were Mr. H. Antcliffe, Sheffield, Mr. R. Feaver Clarke, Gravesend, with the hon. secretary and treasurer, Mr. H. W. Gadd, of Exeter.

In moving the adoption of the annual report, the Chairman referred to a paragraph which recorded that on May 8, at a meeting of delegates in London, he (the Chairman) gave an address on "The Future of the Federation," and emphasised the necessity of its looking after the commercial side of pharmacy. An amended constitution, he said, was on the agenda for consideration at the present meeting. It embodied the Executive Committee's view of what was desirable. Whether much good had resulted from the meeting held in London on that subject might be doubtful. For his own part, he was disappointed with the attendance. He had expected a representative gathering, with some manifestation of enthusiasm, but those features certainly were lacking. It was open to question whether two meetings in the year were necessary. True, the papers read were interesting, and that given by Mr. Kirby contained information of value relative to the Workmen's Compensation Act. The Town Tenants' League was a movement to be encouraged. To that question, and to the best means of counteracting the growing evil of co-operative trading, the Executive would have to give close attention.

The motion for the adoption of the report was seconded by Mr. J. C. Pentney (London) and carried.

The financial statement was also submitted and approved.

The Amended Constitution.

The Chairman said he had next to submit, in the name of the Executive, the scheme for an amended constitution, arrived at as the result of the meeting between Association delegates and the Executive. It was printed along with the report, and members had no doubt made themselves acquainted with it. He had pleasure in moving that the scheme generally be approved, subject to matters on points of detail.

Mr. Rutherford Hill (Edinburgh) moved as an amendment :

> That, in the opinion of this meeting, there is nothing to justify the reconstruction of the Federation formulated by the Special Committee appointed at the last annual meeting, and that the existing constitution meantime be retained. That any change should be on the lines of modifying the constitution of the British Pharmaceutical Conference by a slightly more liberal interpretation of Article 1, Section 4, so that the Conference should appoint a committee for commercial interests, and arrange a sederunt of the annual Conference exclusively for the discussion of matters within the sphere of the committee. That a committee be appointed with power to confer with the Executive Committee of the British Pharmaceutical Conference to enable such a scheme to be carried out at the 1908 meeting of the British Pharmaceutical Conference, in accordance with Rule 9 of the Conference Constitution.

Mr. Hill said the object of the amendment was not, strictly, the rejection of the proposed constitution, but rather the suspension of the matter till it has been definitely ascertained whether or not there is any prospect of a reconstitution of the Pharmaceutical Conference, which would make the Federation a department of its work. That was the view held by the Edinburgh Association. When they received the draft sent by the Executive that Association appointed a committee thoroughly to go into the question. They saw no reason why the constitution of the Pharmaceutical Conference should not be revised so as to admit of a Trade Interests Committee being appointed. Proposals in that direction had been discussed by the Conference Executive, on the motion of Mr. Kemp, of Manchester, but rejected. This fact notwithstanding, the Federation itself had never formally been in communication with the Executive of the Conference. As showing the interest of Edinburgh in the work of the Federation, Mr. Hill pointed to the fact that five members of the Edinburgh and District Association were present that afternoon—(hear, hear)—preferring to interest themselves in business rather than take part in the social functions which were provided for the Conference visitors. (Laughter.) He assured the meeting that it was a great act of self-sacrifice on their part. (Laughter.)

Mr. Rowland (Edinburgh) seconded the amendment. His opinion, he said, was that the new constitution would not make the Federation any more useful. It was only by slow degrees that the Conference had been led to recognise them at all.

Mr. F. P. Sargeant (Leeds) said it was the wish of everyone that the Pharmaceutical Conference should show more interest than it did in trade questions, and, if possible, appoint a committee to deal with them. But it seemed to him that certain dangers would attend a reconstitution of the Conference. In the first place, he did not think that, as an organisation, it had any sympathy with the general work of the local Associations—(hear, hear)—and he felt strongly that the members of those Associations were not in sympathy with the work done by the Pharmaceutical Conference. An analysis of its membership would show that a large proportion were retail chemists; but the number of retailers was very small in proportion to the members of local Associations. So far as he could see, the resolution meant a body which would do the work of, and be practically the same as, the Federation of Local Associations; only it would be under another name. He could not see that any good would come from this amendment.

Mr. Giles (Aberdeen) claimed for the Federation that it had done a large amount of useful work in the past, in the interest of members, which could not have been done by any other agency. (Hear, hear.) The proposed meeting between representatives of the Federation and the Conference Executive was, in his view, a step in the right direction. At the same time, he felt convinced that the Pharmaceutical Conference would not take up the work, which to them appeared so necessary, very heartily. It busied itself with purely scientific pharmacy, and would hardly stoop to trade questions. Unless, therefore, there was a prospect of their being met in a reasonable manner the Federation had better go on as at present constituted. He suggested waiting until the Conference, of its own initiative, formed a section to deal with trade interests.

Mr. G. Lunan (Edinburgh) insisted that the Edinburgh proposal (as embodied in the amendment) was an eminently practical one. The suggestion for a conference was a wise one.

Mr. Hanson (Bradford) recommended that the Federation should continue its work, under the amended constitution, and that the committee should take an early opportunity of approaching the Executive of the Pharmaceutical Conference to see if a meeting could be arranged. He had no wish to see the Federation lose its identity. The question was often asked—Had the Federation justified its existence? He thought it had.

Mr. Hill said it was not in the mind of the Edinburgh Association to bring the Federation to an end. They were absolutely convinced not only of the splendid work it had done in the past, but of the good it was capable of doing still, on the same lines.

In the discussion which followed, Mr. J. P. Gilmour (Glasgow) supported the amendment of the constitution, while expressing sympathy with the Edinburgh proposals. It would be a good thing if the Pharmaceutical Conference could be induced to establish a trade section, but he had his doubts on that point.

Mr. T. Maben (London) said he thought the amendment would be a mistake, because the Conference Executive were not likely to accede to their wishes. The proper thing would be for one or two individuals to move, at a Conference meeting, a resolution in favour of the formation of a trade section. He believed this would meet with considerable support.

The Chairman then put the amendment to the meeting, and it was lost, six voting for and twelve against it.

The proposed new constitution was then considered clause by clause.

Some discussion took place on a section of Clause 2, which defined one of the objects of the Federation to be "to seek to increase the membership of the Pharmaceutical Society, and to support the Council of that Society in any efforts it may make to improve the position of its members." Objection was raised to this—some members regarding it as a "pin-prick"—and a motion was made for its deletion. To delete it, however, Mr. Beacock and others contended, would be an act of weakness.

The Chairman said he was opposed to the deletion of the section.

On a vote being taken, it was decided by a large majority that the clause should be retained.

Discussion took place also on the question of the subscription. It was decided that the old scale should be retained, varied only by fixing the rate for an Association having over 100 members at 5*s*. for each 50 over the 100.

On Clause 7, which defines the functions of the General Purposes Committee, Mr. Pentney (London) moved: "That the executive work of the Federation be entrusted to a General Purposes Committee, which shall hold its meetings at some appointed place in London." No one, he said, had felt more than he had the need for the Federation, but there was needed, especially in reference to Parliamentary work, some authorised body in London who could act in its name in any emergency. Its executive should be where it was most needed.

The Chairman, however, thought that the appointment of an executive committee in London would limit the power and usefulness of the Federation.

Mr. Pentney's amendment was rejected by a large majority.

Mr. Pentney afterwards suggested that a co-secretary should be appointed resident in London, but this found no support.

It was resolved to continue holding the annual meetings in the same town and at the same time as the Pharmaceutical Conference. Further, it was resolved that at any meeting of the Federation the representatives of five Associations, or twenty accredited delegates, should form a quorum.

A proposal that the President of the local Association in any town where the Federation holds its annual meeting should be President of the Conference was not approved.

Power was given to the Executive Committee to communicate with the affiliated Associations asking them to appoint delegates to meet for the appointment of officers for the ensuing year.

The meeting then adjourned until Wednesday evening, when the following papers were read and discussed.

Secret Remedies and Preparations.

Mr. J. Cofman's paper on this subject followed up a similar one which he read to the Western Chemists' Association. He divided proprietary articles into three classes: (1) Quack medicines, (2) advertised pharmaceutical proprietaries, and (3) genuinely new or improved preparations, commenting upon each, and in strong terms denouncing the first and second classes. He concluded with the following proposals:

1. That the Federation invite the President and Council of the Pharmaceutical Society to take such steps as is in their power to secure legislation for the proper control of the traffic in secret remedies.
2. That the General Medical Council be approached with an invitation to take similar steps.
3. That in the meantime the Federation address a circular letter to manufacturers of proprietary medicinal articles informing them that in view of prosecutions being instituted by authorities against retailers of proprietaries, retail chemists before consenting to stock or to sell any of their proprietaries shall insist upon obtaining a written guarantee in due legal form of the genuineness of their preparation and of the justice of the claims made for their curative properties, etc., as a cover in case of judicial action.
4. That the Federation strongly resents any libellous advertisements or insinuations reflecting on the honour and integrity of chemists.
5. That all chemists be invited to forthwith and categorically refuse to have anything to do with such of the secret remedies as offend against honesty or with preparations of manufacturers who impugn the good name of chemists as chemists or with preparations not yielding a living profit.
6. That a special and permanent committee be appointed with power to deal with this branch of pharmaceutical interests.

He also submitted the following motion:

> The Federation of Local Pharmaceutical Associations, strongly convinced that the present unrestricted and uncontrolled traffic in secret remedies is fraught with grave dangers to the public health and is highly detrimental to the moral and material development of pharmacy, urge the President and Council of the Pharmaceutical Society to take such steps as is in their power to induce his Majesty's Government to introduce at an early date proper legislation for the effectual control of the said traffic.

Buying Sections.

Mr. J. Gilbert Jackson, of Sheffield, described the main objects of the Sheffield Buying Section Committee:

1. To increase the membership of the local association.
2. To promote a more friendly feeling among ourselves, by striving to put away any petty local jealousies which may spring up.
3. To show certain members of the local craft who refrain from joining the association, on the ground that it existed solely for pharmaceutical and scientific purposes, that something could be gained by becoming members.
4. To enable all its members to buy on such terms that where it is necessary for them to compete with limited companies they are in a position to do so.

In all these particulars the Committee has been successful. In laying down a scheme for the actual working of buying sections, he said each Association must be its own architect, as different towns have their own special circumstances which govern the working. In Sheffield the only way to work was to have one depot only where all goods are sent, and to which each member must send when wanting. This system was preferred to individual buying and stocking, because in a scattered city like Sheffield, where the majority of its members are in business in the suburbs, it would entail a great loss of time in sending a boy to different shops for various articles. Moreover, "individual stocking" is liable to fail, and he mentioned reasons. He has known close on 20*l*. worth of proprietary articles sent for to the Sheffield depot in one day, and all supplied. The chief rules which govern the buying section and the methods of working are as follows:

> The officers are distinct from those of the Association, and consist of a chairman, secretary (who is also the storekeeper), treasurer, and four others.
>
> The financial transactions are distinct from those of the local association.
>
> Members of the buying section must first be members of the local association, and on joining deposit 10*l*. capital, 5*s*. entrance fee, and annual subscription, 2*s*. 6*d*.
>
> The treasurer has always a large balance in the bank.
>
> The secretary or storekeeper orders all goods as he requires to replace his stock. For anything new he must first obtain the consent of the committee.
>
> The stock is practically confined to proprietary articles, but glycerin is contracted for in ½ and 1 cwt. tins.
>
> The storekeeper is somewhat compensated for his trouble by the payment of 1*d*. for every 10*s*. worth of goods purchased. He has also the whole of the free packages for sale.
>
> Everything is sold at cost price, and only to members of the section.
>
> The depot is open four afternoons per week, from two to five, and only in these hours are goods supplied. The stock is open for inspection by members during these hours.
>
> Each member has a manifold order-book, which he sends to the storekeeper, with the exact amount of each article worked out in cash. Any quantity from 1 to 12 dozen is supplied.
>
> In the stock-room each article has a card with it. On one side is the date when the goods are put into stock, and on the other a list of the whole of the members, and as they withdraw stock it is entered opposite their names, so that the committee when they check stock are in a position to tell at once what the amount of stock should be. Any member of the committee takes a card, adds both sides, substracts, and initials the difference.
>
> In purchasing proprietary articles, wherever it is possible to buy from wholesale houses on the same terms as direct from the manufacturer the wholesale house gets the preference.

Mr. Jackson stated that the members are pleased with the section, as it saves money. The scheme is the same, except in a few details, as the one which has been working successfully in Halifax for some years.

The meeting was well attended, Mr. Currie presiding. Mr. Cofman's paper was read by Mr. Gadd. The advisability of submitting his proposals to the Pharmaceutical Society and to the General Medical Council was discussed. Mr. Rutherford Hill considered that it did not come within the proper functions of the Society to deal with trade matters, although he was quite sure individual members of the Council were all in sympathy. The proper way was to move as individual members of the Society. The same difficulty would apply to the General Medical Council. Mr. Pentney deprecated doing anything in the matter at all. The public ought to get what they want, and chemists had no right to complain so long as they got a profit. Mr. Savage thought that was not the only question. There was a great necessity for educating medical men. Mr. Sutherland considered there were two issues: the one dealing with proprietaries advertised to the public, the other those put before the medical men. He agreed with Mr. Hill that the solution would be nearer if members of Parliament were approached in the first instance, and the matter were discussed in Parliament so that the public might be educated. Secret remedies for the use of medical men are quite as mischievous to chemists, but medical men are becoming more alive to their danger. Mr. Dolbear detailed the experience of the Oxford Association, and Mr. Gilmour was strongly of opinion that the education of medical men was the only hope. He said a Glasgow Formulary for the use of medical men is being compiled. Ultimately it was agreed to remit the matter to local associations and report.

Mr. Jackson then read his paper, which was briefly discussed by Messrs. Beacock, Gilmour, Pentney, and others, and, on the suggestion of the Chairman, each town is to be advised to take the matter up to suit local conditions.

Mr. Gadd introduced the Restraint of Trade (Shops) Bill, and there was a general agreement that the annulment of the restrictive clause regarding assistants opening in opposition would be iniquitous.

Formulas for Wines.

By "Wrinkles."

Why is wine-making in England to a great extent a lost art? It is a profitable addition to a business, or it can be made upon a small scale for home use, while its consumption as a beverage to take the place of immature badly made fiery spirits would be a national gain. Professor Liebig wrote:

> "Wine as a restorative, as a means of refreshment when the powers of life are run low, as a means of compensation when misproportion occurs in nutrition, and as a means of protection against organic disturbances is surpassed by no product of nature or art."

Undoubtedly were wine the national beverage of this English people we should have fewer crimes and less disastrous results from drinking-habits. as in Continental countries where it is consumed the mad drunkenness caused by the consumption of newly made spirits is a thing unheard of. Authorities are agreed that the latter form of intemperance is the worst, and hope of even reclaiming the victim must as a rule be abandoned.

In the wine-growing districts of Portugal you can buy a delicate red wine at 5*d.* per gal.; indeed, a few years ago after a great vintage a light port was sold at 1*d.* per gal., while in the same period in Greece sound wine fetched even less than this moderate sum.

I have found that the most reliable base to use for good wholesome wines is the dried grapes sold as Valencia raisins.

Raisin or Base Wine.

Dried valencia raisins	70 lb.
Demerara sugar	110 lb.
Honey	1 lb.
Cream of tartar (98 per cent.) ...	12 oz.
Boiling water to make up to ...	58 galls.

Bruise the raisins thoroughly, place in a tub and cover over with 10 galls. of boiling water; thoroughly stir it, and after four hours pass the liquor through a sieve and put into a clear cask, returning into the tub the raisins from the sieve. Now dissolve the cream of tartar separately in a little hot water and add to the liquor in the cask. Then treat the honey in a like manner and lastly the sugar. Now make the liquor in the cask up to 58 galls. by repeating the operation first described, *i.e.* by pouring 10 galls. of boiling water at a time over the raisins letting it stand three hours on them before straining, in order to thoroughly exhaust fruit. As soon as the cask is full, well stir it all up and put a piece of canvas over the bung-hole. In a few days, according to temperature, a lighted match will not burn in the bunghole; then bung it down securely and bore a hole 3/8 to 5/8 of an inch beside it, and into this hole drive a small tube, affixing to it a length of indiarubber tubing, the other end of which should be placed in the bottom of a vessel of water 15 or 16 in. deep; or, if wanted for carbonating, the gas can be collected and passed through purifier into gasometer. When the gas ceases to bubble in the water, fermentation has ceased, and the wine should be racked off into a clean cask and fined down.

Orange-wine.—Add 7 lb. of dried orange-peel to the raisins and other ingredients used for making the base wine before adding the hot water.

Elderberry-wine.—Add 26 pints of elderberry-juice to the raisins, etc., used in the base wine, but before adding the hot water.

Ginger-wine.—Add 6 lb. of crushed Jamaica ginger and the rind pared very thinly of fifteen lemons to the raisins, etc., used in base wine before adding the hot water

I have made excellent wines from the under-mentioned *old* recipes, and I strongly recommend a trial.

Orange Wine.

Seville oranges	21 lb.
Sugar	32 lb.

Put the sugar into a 9-gall. cask and place beside it two pans, into one of which put the pulp after squeezing the juice into the cask, carefully straining it, and in the other the peel, pared thin. Pour 12 pints of water at a time over each of the pans containing pulp and peel, and strain the liquor into the cask, and continue to do so until cask is full. Follow directions already given for base wine.

Ginger Wine.

Crushed Jamaica ginger ...	3 lb.
Sugar	30 lb.
Lemons	1 oz.
Chopped muscatel raisins ...	7 lb.

Boil the ginger in 2 galls. of water for half an hour, then pour it over raisins, peel, and sugar, and add, when nearly cold, the lemon-juice, strain, and put into cask. Now put two lots of boiling water, 3 galls. each, over the ginger, raisins, peel, etc., strain, and put into cask. Follow directions already given.

Muscatel-raisin Wine (*very fine*).—Boil the water and let it become cold, then put into a cask 8 lb. of muscatel raisins for each gallon of water used, taking out the large stalks. Put the fruit and water into a cask alternately until the cask is full. Cover the bung-hole with a piece of canvas, and stir the wine every day, keeping the cask full by adding boiled water, which must always be cold. Follow directions already given. Bottle in twelve months.

Raspberry or Currant Wine.

Twelve pints of sound fruit bruised to each gallon of cold, boiled water. Let it stand twenty-four hours, strain through muslin, and stir in 4 lb. of loaf sugar to each gallon of strained liquor; put in a cask and follow directions already given.

The Week's Poisonings.

Thirteen cases of fatal poisonings have occurred since our last issue, two being due to prussic acid, two to oxalic acid, and one each to weed-killer, rat-poison, laudanum, cyanide, hydrochloric acid, and chloral. A peculiar case was that of John Derby, who during Whit-week was engaged to disinfect a house at Manchester formerly occupied by a person suffering from an infectious disease. He used for the purpose chlorate of potash crystals, hydrochloric acid, and carbolic acid. During the mixing he inhaled some of the fumes, became ill, and died.—Mrs. Hetty Elizabeth Duncan, a divorced woman, committed suicide with chlorodyne at Landport, Portsmouth, and W. H. Davies (43), a master mariner, died at Fishguard through an overdose of chloral. The evidence showed there had been negligence, but it was insufficient to show who administered the medicine.—Cyanide was taken by Henry Francis Savill (30), at Leicester, and at Marylebone a shoeblack (62) took hydrochloric acid; while a collier at Pwlldu, near Blaenavon, poisoned himself with rat-poison.—A horse-breaker's wife died at Kegwork through taking oxalic acid, and at Oldbury Silas Abbey (32) also poisoned himself with oxalic acid, it being stated in both instances that it was required for cleaning straw hats. The death of a twelve-months' old child at Nottingham through an overdose of laudanum is the third case within a fortnight, and this fact brought a strong comment from the Coroner, who was convinced that the use of the drug in Nottingham was very much too common and the sale far too large.—A Chester veterinary surgeon (63), holding high rank among Masons, ended his life with prussic acid, and at Castle Donington a farrier died from an overdose of a similar poison.

Business Hints.

An occasional symposium by "C. & D." subscribers upon methods which they have found successful in improving retail returns.

Window-dressing.

The general principles of window-dressing are so easily forgotten, says the "Chemist and Druggist of Australasia," that it is worth while now and again to recapitulate them. The object in dressing the window is that passers-by may see what goods are offered for sale and may be attracted to buy them. But a secondary object has particular weight in the case of pharmacists, whose business depends very largely upon the reputation for knowledge and scientific training. It is therefore often worth the while of a pharmacist to depart from the usual idea of window-dressing, and to lay himself out to impress the public mind in other directions with scientific and professional qualifications. A window-display of scientific apparatus or of the apparatus used in dispensing is not an injudicious method of using the window of a pharmacy, although in most other businesses it would be quite out of place. The primary object of window-dressing is to catch the public eye. Something a little out of the common in the way of colour, movement, or design seems to be necessary for this purpose. The second object is to impress upon the mind of the passer-by the actual goods that are being displayed, with such information as to price, quality, and uses as will arouse in his mind a desire to purchase. The window-display which simply gives a pleasant impression or arouses curiosity without calling attention to the goods offered for sale is a waste of labour. Methods of producing a strong impression vary. Nothing is so effective as something in movement. A variety of mechanical devices have been adopted for this purpose, and quite simple arrangements can be devised to produce movement among the goods that are shown. One expedient that has almost disappeared from the streets is a mechanical arrangement for tapping the glass. Another method of attracting attention is to make a large display of one class of goods. This needs a considerable quantity of stock or of dummies, and is troublesome to arrange. A more effective style is to arrange the window with a suitably coloured background and place only three or four of the articles, tastefully arranged, on the floor of the window. It must be remembered that most people look down rather than up, and things placed below the level of the eye are more likely to be seen than those that are placed higher. It has come to be recognised as an axiom that nothing should be put in the window without proper window-tickets and prices. A tasteful arrangement of colours is always effective in calling attention to the window. Crinkled papers, obtainable in so great a variety of tints, form cheap and easily arranged backgrounds. Constant variety is a matter of importance. A window that frequently presents fresh ideas, fresh goods, and fresh arrangement is sure to arouse interest. Efforts should always be made to show those goods that are really profitable, to display things that will interest a considerable portion of the passers-by, to avoid everything that will be offensive to the most delicate taste, to give information that can be grasped at a glance and will show that the goods are likely to be of use to most of the spectators. If the window does not pay a good portion of the rent by means of the extra sales that are effected through its medium, it is not doing its proper work.

Raised Letters on Showcards.

C. M. Dexter states in the "New Idea" that he finds the following a good method of making raised-letter signs: A rubber bulb syringe with a soft nozzle is filled with a semi-liquid mixture of plaster of Paris and water (tinted if desired), and this, by squeezing the bulb, is forced out in a stream which can easily be guided along the pencilled letters. The method is one used by confectioners for decorating cakes, the special nozzles and bags being obtainable at a cheap rate.

Window-show.

A fire on the hearth or under a water-still is an excellent attraction in a window-display. The following "fire" described in the "Spatula" can be effectively used: Cut a hole in the floor of the window and cover it with a coarse wire screen; beneath the opening place several red-globed electric lights and a small electric fan; to the upper surface of the screen attach triangular pieces of red, orange, and blue crêpe paper of various sizes; and above them place the still or kettle. The current of air from the fan, and the light shining up through the crêpe paper, will give it the effect of a blazing fire. If the window is kept darkened the effect is more striking.

Scientific Progress.

Temperatures under this heading are on the Centigrade scale.

A New Terpene.—Frankforter and Franz have isolated from the crude turpentine of the Western fir a terpene which they have termed firpene. It has sp. gr. 0.8598, ref. ind. 1.47299, opt. rot. −47.2°, and boils at 152-154°. It yields a hydrochloride melting at 130-131°, and a dichloro-hydrochloride; also a hydrobromide melting at 102°. It does not yield a crystalline nitrosochloride. It is therefore apparently different from pinene, and may possibly be in reality a new chemical individual.

Contaminated Gelatin.—A good deal of the lower grades of gelatin on the market is badly contaminated with either arsenic or copper. The former is derived from the pyrites used for the preparation of the sulphuric acid used in manufacturing gelatin, while the latter is derived from copper utensils. The following details from ten samples recently examined by a London analyst are of interest:

3 samples contained 3 to 5 parts of arsenious oxide per million.
2 samples contained 5 to 10 parts of arsenious oxide per million.
1 sample contained 13 parts of arsenious oxide per million.
3 samples contained 0.3-0.5 grain of Cu per lb.
1 sample contained 1.25 grain of Cu per lb.

Reactions between Solids.—To the Royal Society, on May 23, a paper was communicated on "Chemical Reaction between Salts in the Solid State," by E. P. Perman. Experiments have been made on the following pairs of salts: lead chloride and potassium iodide, mercuric chloride and potassium iodide, sodium carbonate and barium sulphate, sodium sulphate and barium carbonate. The chief points investigated were the effect on certain of these salts of (1) traces of moisture, (2) great pressure, (3) heat. It was found that reaction always took place unless the salts were very carefully dried, and that the reaction was accelerated by shaking the mixture, and by the application of heat or great pressure; further, that the velocity of the reaction is much influenced by the solubility and volatility of the salts. The effect of small quantities of some other solvents was also tried. It was found that methyl alcohol caused a reaction between lead chloride and potassium iodide in the same way as water, while benzene, chloroform, and ammonia were without result. Finally, it would appear that reaction between solid salts is of essentially the same nature as that between salts in solution, and it is suggested that the water (or other solvent) present forms a film on the surface of the salts, and that in this film minute quantities of the salts dissolve, and there react. In the absence of an ionising solvent there is no chemical reaction, even when the substances are heated or subjected to great pressure.—*Nature*, vol. lxxvi. p. 190.

Trade Report.

NOTICE TO BUYERS.—The prices given in this section are those obtained by importers or manufacturers for bulk quantities or original packages. To these prices various charges have to be added, whereby values are in many instances greatly augmented before wholesale dealers stock the goods. Qualities of drugs and oils vary greatly, and higher prices are commanded by selected qualities even in bulk quantities. It would be unreasonable for retail buyers to expect to get small quantities at anything like the prices here quoted.

42 Cannon Street, London, E.C., July 24.

OUR report deals with the markets up to Wednesday evening, and further intelligence will be found in our Coloured Supplement. A steady quiet tone has prevailed in most articles, the leading feature being a further substantial advance in opium on American buying. Morphine salts have again been advanced by 6*d.* and codeine and salts by 1*s.* 5*d.* per oz. Quinine is firmer in second-hands, but it is a difficult market, sellers acting cautiously. English refined camphor is cheaper, although no official reduction has been made. Copper sulphate is lower. Among drugs and essential oils, podophyllum-root is higher. Lemon oil is again dearer in Messina, star aniseed is a shade firmer, as is senega. Cascara sagrada is firm. New insect flowers are arriving freely in Trieste, but prices are steady. Stavesacre and hellebore are scarce. Gentian, lemongrass, and citronella oils are tending easier. Camphor oil is lower. Turpentine is irregular, and Jamaica ginger is easier. The following table shows the more important alterations :

Higher	Firmer	Easier	Lower
Codeine and salts Morphine salts Opium Podophyllum root	Aniseed oil Grains of paradise Lemon peel Quinine Senega	Citronella oil Gentian Lemongrass oil	Antimony Camphor (Eng. ref.) Camphor oil Copper sulphate

Cablegrams.

Smyrna, July 22 :—Buyers of opium on United States account have again come forward, and have paid the equivalent of 18*s.* 6*d.* per lb. for Karahissar testing 11 per cent. morphine. The opinion is that the market will shortly advance to 22*s.*, in which case buyers would do well to secure at best.

Smyrna, July 23 :—The sales of opium so far this week amount to 80 cases, and the market is firm at the equivalent of 20*s.* 6*d.* per lb. for fine Karahissar.

Heavy Chemicals.

There is little that is new or of special importance to be reported regarding the condition of affairs in the heavy chemical market. Demand keeps up well both on home and export account, though it is perhaps just now somewhat low when compared against the past few weeks. Values generally are on the steady side, and with continued firmness in fuel and raw materials are likely to continue so.

Sulphate of Ammonia is without fluctuation, and on the whole is steady with a fairly active demand. There is not much of moment being done on forward account. Present nearest figures: Beckton, 12*l.* 2*s.* 6*d.*; Beckton terms, 11*l.* 13*s.* 9*d.*; London, 11*l.* 17*s.* 6*d.*; Leith, 12*l.*; and Hull, 11*l.* 15*s.*

Bichromates of Potash and Soda are steady at unaltered rates, and all round demand is very fair. Bichromate of potash, English and Scotch deliveries, 3½*d.* per lb., less 2½ per cent. Glasgow, and export 3¼*d.* per lb. net, f.o.b. Glasgow. Bichromate of soda, English and Scotch deliveries, 3*d.* per lb., less 2½ per cent. Glasgow, and export 2¾*d.* per lb. net, f.o.b. Glasgow.

Alumina-products rule practically unchanged but are very steady, and there is a good consumptive demand. Crystal alum lump 4*l.* 17*s.* 6*d.* to 5*l.* 5*s.*, lump in tierces 5*l.* 2*s.* 6*d.* to 5*l.* 10*s.*, and ground in bags 5*l.* 7*s.* 6*d.* to 5*l.* 15*s.* per ton. Sulphate of alumina, purest qualities, and practically free of iron, 4*l.* 12*s.* 6*d.* to 5*l.* 2*s.* 6*d.* per ton for ordinary strength in usual casks and customary allowances for bags and loose slabs. Extras for higher concentrations remain as before. Aluminous cake 50*s.* to 55*s.* per ton and alumino ferric 50*s.* to 60*s.* per ton, according to quality, condition, package, and delivery. Hydrate of alumina, high strength Al_2O_3 and purest quality 12*l.* 10*s.* to 13*l.* per ton in large casks. Special pulp hydrate of alumina 15*s.* to 17*s.* 6*d.* per cwt. Special pulp quality, dried and in lumps, 37*s.* 6*d.* to 40*s.* per cwt., and ground 38*s.* to 40*s.* 6*d.* per cwt. Aluminate of soda, finest quality and high strength Al_2O_3, 35*s.* to 37*s.* 6*d.* per cwt. Second quality 12*s.* to 13*s.* per cwt. Carbonate of alumina 35*s.* to 37*s.* 6*d.* per cwt.

Mitcham Peppermint and Lavender Crops.

Messrs. Matthew & Hobbs, of Croydon, write as follows:

Peppermint.—The prospects of the peppermint harvest have improved during the last six weeks. In April, May, and the early part of June, cold weather was experienced, which considerably retarded the growth of the young plants, especially those on the uplands, and a change was essential to ensure any good yield of oil. Everything depends on favourable weather between now and the distilling period, which will commence about the latter end of August, and unfavourable climatic conditions might entirely spoil the crop. It is reported, however, in some districts that the plant is infected by blight, but taking a fair estimate an average yield of oil should result. Prime oil should certainly command a good price this season, stocks of last year's oil being entirely sold out.

Lavender.—Only a small acreage is under cultivation, the prices obtained for oil during last few years being no inducement for growers to extend their acreage, and many find it now more convenient to bunch the bloom.

Chamomile.—Plants looks strong and healthy, and should give a satisfactory yield.

Bulgarian Otto of Rose.

Our Bulgarian correspondent, under date of July 18, writes as follows from Philippopolis: The Bulgarian rose market, especially in years of average crops, has nothing in common with the consuming markets. In all such cases it is a market apart by itself and entirely independent of the market conditions of the consuming centres. The consuming markets may be full of old stock, all the large consumers may have extra supplies of otto to last them one, or even two, years, but all this has not the slightest influence over the establishment of the season's price here. Strange as this may appear, it is a fact that bears no contradiction. It was so in 1878, when the Russo-Turkish war was used as a bugbear to scare and "bull-doze" dealers and consumers abroad to pay famine prices; it was so also in 1893 and 1898, when these two average crops—much smaller than the present—were likewise represented as famine crops and their otto sold at an advance of 30 to 40 per cent. It would have been very surprising indeed if the same clever manipulators of grades had acted differently this year.

Even before the harvesting of the present crop the same tactics were employed, and the cry of a famine crop and of famine prices this year was heard on all sides. Foreseeing this, I took this year special pains to check and verify not only the total output of the new crop, but also all the available old stock found in Bulgaria. While I was still collecting this data I was surprised to hear that immediately after the rose harvest the very same cornering parties of old were once again repeating their exploits of 1878, 1893, and 1898, and buying, now singly, now jointly, all the otto of rose offered for sale at prices from 35 to 50 per cent. higher than last year's price. In this way and at break-neck haste they had bought in the course of a fortnight the ottos of about twenty-five villages, almost regardless of grade and quality, at famine prices, ranging from 22*s.* 6*d.* to 25*s.* per Turkish ounce. The highest price they have so far paid is 26*s.* 10*d.* per Turkish oz., and only about one-quarter of all the available otto has been purchased. Practically the best rose localities in the district remain whole and untouched, expecting higher prices for their ottos. It is not only doubtful, but quite certain, that the would-be cornering parties will not be able to sustain here or abroad the present high prices. No consumer in the West will accept them, and, what is more, thus far eager buyers have been only these clever manipulators, who sell abroad all sorts of grades at all sorts of prices, to suit all customers and all markets. The exporters, who have old stock on hand and never sell grades, have so far been only partial buyers, and refused to participate. Their holding back has already upset the calculations of the cornering parties and cooled their ardour to buy up all the otto. To corner all the available stock of otto in Bulgaria is an impossibility, especially as the cornering parties during the rich years of 1900 to 1906 have rarely bought among themselves over 40,000 oz. annually. The cornering parties are still playing bold by pretending that they have already sold abroad twice the quantity of otto they have so far bought, but no sensible man in the market believes this. No dealer or consumer abroad, however confiding, timid, or shy, will care so early in the season to buy otto in big quantities at famine prices. The otto of rose item in your Trade Report of June 29, to the effect that otto of rose with Parry's analysis sells in the London market at only 18*s.* and 18*s.* 6*d.* per English oz., shows in a terse but convincing manner that no English dealer or consumer will readily buy otto at any excessively high prices. It has been a veritable cold douche for our speculators here, and has had a staggering effect on the market, which is bound to break down sooner or later. It could not be otherwise. To open the rose market so early in the season, and with an advance over last year's prices of 40 per cent. to 50 per cent., was not only a most unwarranted deal, but also very unhealthy and risky, and more baneful to the growers themselves than to the consumers abroad, and all sensible people, whether exporters, jobbers, or growers, strongly condemn it, as it only prepares a sure and even bigger fall in the price of otto next season. Artificial and famine prices breed only sophisticators and speculators. They alone thrive on them. Honest prices, on the contrary, make honest growers, distillers, and merchants, and that is what all true growers and dealers want. Artificial and famine prices only force the consumers in self-defence to reduce their use of otto to a minimum, and in some cases to replace it by synthetics, which cannot be good for the growers. The true interests of the growers demand the continual increase of the otto of rose consumption, which can be assured only by honest prices. The present artificial prices will surely leave more than half of all the available stock of otto unsold. *Qui vivra verra.*

Continental Drug Markets.

Arsenic.—The demand has weakened somewhat, but the production is disposed of until October. For sales beyond that period quotations are somewhat below present prices. Second-hand dealers are well supplied with prompt for inland consumption in Germany, so that for the present, although prices are well maintained, a further rise is improbable.

Antimony.—Prices have shown a declining tendency during the last few weeks and consequently consumers only buy for their immediate wants. Spot (Hamburg) and prompt delivery are selling at 70m. per 100 kilos. for quantities.

Camphor.—German refiners have reduced their price to 900m., and it would seem probable that sooner or later prices will be reduced still further. In second-hand 885m. to 880m. is quoted.

Carnauba-Wax.—As may be expected at this season, business is very quiet and the demand is very small in Germany. The large quantities which have arrived during the last few weeks were almost entirely stored for re-export. Present quotations are 315m. for current grey, 335m. for fatty grey, and 350m. to 380m. for yellow qualities per 100 kilos. in transit.

Citric Acid.—The market has declined still further. July delivery is offered at 3.90m., July-September at 3.80m., and September-December at 3.60 m. per kilo. for lead-free crystals.

Elemi.—Prices have declined owing to the arrival of unusually large supplies on the Hamburg market, alleged to be about 1,500 cases, of which the greater part is available; present quotations are 115m. per 100 kilos. ex Hamburg. It is hardly probable that these deliveries have exhausted the Manila production, so that a further reduction in price seems possible.

Japanese Wax.—The higher prices which are reported have hardened the market. The demand has been somewhat brisker and available supplies have brought 114m., while 115m. has been paid for shipment. From Japan 115m. to 116m. per 100 kilos., c.i.f. Hamburg, is quoted.

Oxalic Acid.—Present conditions remain practically unchanged; only limited quantities are available in Germany, so that supplies in second-hands are sought for to meet the unusual demand, and high prices are quoted. The syndicate quote 60m. per 100 kilos. for 1908 delivery in large contracts.

Potash Carbonate.—The production of crude by the makers has been disposed of for some time in advance, and a scarcity has therefore been apparent. Owing to this prices for the refined and pure qualities have advanced and the higher rates will in all probability be maintained for the remainder of this year.

Quillaia is somewhat quieter as there are absolutely no orders. The parcels which have arrived recently have been stored, as the prices asked are not obtainable. Quotations are 52m. per 100 kilos. ex warehouse. There are no offers for shipment from Chili.

Antimony is again easier at from 32*l.* 10*s.* to 35*l.* for Japanese crude on the spot, but regulus is unchanged at 45*l.*

Arnica.—The new crop is expected to be smaller than formerly. Several lots of flowers which have arrived on the Trieste market have been sold on the basis of 42*s.* per cwt.

Asafetida.—The exports from Bunder Abbas during 1906 amounted to 7,006 cwt., against 6,789 cwt. in 1905, the average for the three preceding years being 6,244 cwt.

Balsam Copaiba.—Small sales of bright Maranham (guaranteed B.P.) have been made at 2*s.* 9*d.* per lb. spot.

Belladonna-root.—The spot stocks are rapidly becoming depleted. Small parcels are changing hands at from 65*s.* to 67*s.* 6*d.* There have been no offers of new crop lately, so that it is apparently scarce on the Continent also.

Benzoin.—Sales of fair, rather brown, Sumatra seconds with small almonds have been made at 7*l.* per cwt.

Camphor.—Although no official reduction has been made by English refiners, prices are lower to the extent of about 2*d.* per lb., but business is more or less transacted at private prices. Crude is again offered at lower prices, and a sale of 100 piculs for July-August shipment is reported at 250*s.*, c.i.f. terms. Japanese refined slabs for August-September shipment are quoted 3*s.* 10½*d.*, c.i.f., the spot value being 3*s.* 11½*d.* to 4*s.* per lb.

During the four months ending April 1907 the exports from Japan amounted to 1,309,607 kin. (2,088,000 yen), against 1,152,678 kin (1,275,000 yen) in 1906 and 1,138,941 kin (1,186,000 yen) in 1905.

Cascara Sagrada.—The position is regarded as very strong both here and in the United States, and the opinion is freely expressed that prices will be much dearer in the autumn. At present there are sellers on the spot at 42*s.* to 42*s.* 6*d.*, but there is not much to be had at these figures, most holders anticipating better prices. There are still no offers of new bark for shipment, this pointing to the fact that the peeling, which must now be over, has been small. It would therefore seem policy to cover requirements for some time ahead.

Codeine and Salts.—The makers have advanced their prices by 1*s.* 5*d.* per oz., and now quote 70-oz. contracts of the pure crystals or precip. for delivery over six months at 14*s.* 1*d.* per oz., 13*s.* 3*d.* for hydrochloride and sulphate, and 12*s.* 5*d.* for phosphate. Smaller lots are 3*d.* per oz. more, terms net, fourteen days. New contracts will not be subject to benefit of falling clause.

Copper Sulphate has declined 10*s.* on the spot to 31*l.*, but Liverpool is unchanged at 30*l.* 10*s.* for prompt delivery.

Gentian to arrive is slightly easier at 19*s.* to 19*s.* 6*d.* per cwt. for late shipment.

Golden Seal remains very fine, with a small business at 6*s.* 9*d.* net.

Grains of Paradise are higher at 53*s.* per cwt. spot.

Gum Arabic.—Soudan gums are steady, fair half-hard sorts offering at from 34*s.* to 35*s.* spot, and for good pale soft sorts business has been done at 42*s.* 6*d.* per cwt., c.i.f. delivered weights. Senegal gum has been in improved demand, fair "Bas de Fleuve" being worth 34*s.* on the spot and 31*s.* to 32*s.*, f.o.b. Bordeaux. East Indian gums are quiet.

Hellebore.—Some quantity of black has lately changed on the Trieste market, and the market is bare at the moment. White is also in limited supply, and finds ready buyers at firm prices.

Insect-flowers.—The new crop of closed and half-closed is arriving more freely on the Trieste market, but prices are firm, especially for open flowers.

Ipecacuanha.—Small sales have been made, including Rio (Matto Grosso) at 5*s.* 6*d.* per lb.

Lavender Flowers.—The new French crop is reported to be small and of bad colour. Several inquiries are to hand this week, and good last year's first pickings are selling at 67*s.* 6*d.* per cwt.

Lemon-juice.—English is in fair demand at 1*s.* 6*d.* to 1*s.* 7*d.* per gal.

Lime-juice is steady at from 1*s.* 5*d.* to 1*s.* 6*d.* per gal. for good raw West Indian. Reports are to hand giving bad news about the condition of fruit, but these want verifying.

Liquorice-root.—Common natural is quoted at 10*s.*, which is a rise of 1*s.* 6*d.* during the past few weeks. It seems to be held firmly by one or two houses, and no c.i.f. price has come to hand for some time.

Mastich.—On the Trieste market prices have advanced considerably, equivalent to 222*s.* per cwt.; the stocks at the port are said to amount to a few cases only.

Morphine Salts.—The continued advance in opium has led to a further sixpenny rise in morphine, this making the fourth during the month. The scale is now as follows:

—	Per oz.		100-oz. Contracts over 3 months.		250-oz. Contracts over 6 months.	
	s.	d.	s.	d.	s.	d.
Morphine acetate	8	3	8	2	8	1
,, hydrochlor. cryst. ...	8	5	8	4	8	3
,, ,, pulv. ...	8	3	8	2	8	1
,, meconate	10	4	10	2½	10	1
,, pur. cryst.	10	6	10	4½	10	3
,, ,, precip.... ...	10	4	10	2½	10	1
,, sulph. cryst. ...	8	5	8	4	8	3
,, ,, pulv.... ...	8	3	8	2	8	1
,, tartrate	10	4	10	2½	10	1

These terms are net fourteen days, no falling clause.

Musk.—Quiet. Fine Tonquin blue-skin Pile I. can be had at from 80*s*. to 85*s*. per oz. as to quality, and old-style Pile I. at 60*s*. to 65*s*. Some mixed Pile I. and III. has been sold at from 50*s*. to 53*s*. per oz. Cabardine is scarce and wanted.

Oil, Aniseed Star, is steady with a small business at 5*s*. to 5*s*. 1*d*. spot for "Red Ship" brand; c.i.f. price is 4*s*. 11*d*.

Oil, Camphor.—The white essential oil is lower at 90*s*. per cwt. spot.

Oil, Cassia, is steady with a retail spot business on the basis of 6*s*. 3*d*. per lb. for 80 per cent. to 85 per cent.; 5*s*. 11*d*. for 75 per cent. to 80 per cent.; and 5*s*. 10*d*. for 70 per cent. to 75 per cent.; for shipment, quotations are slightly easier.

Oil, Citronella, is tending easier, with spot sellers of drums at 1*s*. 9*d*. per lb., and for arrival 1*s*. 7½*d*. per lb., c.i.f.

Oil, Lemon.—Extreme prices are again quoted from Messina—viz., from 9*s*., 9*s*. 3*d*., and 9*s*. 4*d*., c.i.f., according to shipper. Good oil on the spot can still be had at from 6*s*. to 6*s*. 6*d*. per lb.

Oil, Lemongrass.—Small spot sales of good Cochin have been made at 3½*d*. per oz., and some business has been done for August-September shipment at $2\frac{9}{16}$*d*. per oz., c.i.f.

Olibanum is very slow, although good drop is scarce, there is little demand.

Opium.—The market is now at a famine price, up to 20*s*. per lb. having been paid for small lots of good Karahissar on the spot, and one dealer is holding out for 23*s*. Common Karahissar has been sold up to 18*s*. 6*d*. Excited conditions continue to prevail in Smyrna, where it is said the equivalent of 22*s*. 6*d*. has been paid for American account.

Smyrna, July 13.—The market has further advanced, the market opening with the following business: Two cases old extra Karahissar at the equivalent of 16*s*. 1*d*., and one case new Adette at 14*s*. 9*d*. (3 per cent. waste not included) per lb. c.i.f. terms. Since then holders have become reserved, and buyers not wishing to pay the higher prices unless the quantity obtainable was fixed, held aloof until the closing of the market, which was very firm, with a rising tendency. The arrivals amount to 215 cases, as compared with 504 cases at the same time of last year.

Pimento is firm at 2¾*d*. per lb.

Podophyllum-root is dearer. The present spot price is 28*s*. 6*d*., but a further advance is expected.

Quinine has a firmer tendency in second-hands. It is reported there are buyers of B. & S. and/or Brunswick at 7⅝*d*., and that this price has been refused for 20,000 oz., 7¾*d*. being lowest. It is said 7⅝*d*. has been paid for December delivery.

The exports of "quinine, quinine salts, and combinations" from Germany during the five months ending May amounted to 97,400 kilos.

Senega is firmer with sales at 2*s*. 2*d*. net, but 2*s*. 3*d*. is now lowest.

Shellac.—Fair TN Orange continues to sell on a basis of 207*s*. spot.

Soy continues very quiet, with sellers at from 1*s*. 5*d*. to 1*s*. 6*d*. per gal.

Stavesacre-seed has become very scarce on the spot, and from Trieste 44*s*. per cwt. c.i.f. is quoted.

Tamarinds.—The market for Antigua has been cleared for the Continent at 14*s*. 6*d*. to 15*s*. 6*d*. per cwt. in bond.

Tonka-beans.—It is reported that good orders from the United States have almost cleared this market.

Wax, Japanese.—Small spot sales have been made at from 59*s*. to 60*s*. per cwt.

London Drug Statistics.

The following statistics are compiled from information supplied by public warehouses. They relate to the receipts and deliveries of some of the leading drugs from and into the London public warehouses for the month of June 1907, and to the stocks on June 30.

—	June		Stocks		1907	
	Landed	Delivd.	1907	1906	Imprtd.	Delivd.
Aloes............cs, etc.	354	194	323	385	895	901
,, ... gourds	—	179	—	—	364	364
Aniseed, star .....cs	—	—	—	—	—	—
Arrowroot ......pkgs	902	371	6 821	9 629	7,335	4,872
Balsams ... cks, etc.	10	22	668	478	475	300
Calumba .... bgs	294	35	750	249	712	355
Camphor.......... pkgs	1,227	1,023	3.469	671	7,199	4 637
Cardamoms ,,	346	331	* 2,644	2,037	3,183	1,802
Cinchona......... ,,	893	679	4,587	6 860	3.053	3,473
Cocculus indicus ,,	—	10	80	–	100	20
Cochineal .... ,,	24	37	367	264	808	377
Cubebs .... ,,	—	5	442	468	—	100
Dragon's-blood... ,,	9	13	87	87	43	114
Galls............... ,,	311	309	2,632	1,459	3,601	2,281
Gums—						
Ammoniacum ,,	20	2	41	4	34	4
Animi .... ,,	68	105	113	227	506	583
Arabic .... ,,	884	692	* 9,096	5,474	6,482	5,315
Asafetida...... ,,	185	204	319	813	800	839
Benzoin ...... ,,	121	207	987	903	1,227	1.280
Copal............ ,,	4,374	3,662	*15,160	17.686	23,251	23.519
Damar .... ,,	864	611	* 2.310	3 016	4,801	4,330
Galbanum ... ,,	—	—	—	—	—	—
Gamboge...... ,,	1	24	32	122	61	113
Guaiacum ... ,,	—	3	51	55	17	15
Kauri ... tons net	157	299	* 1.018	1,154	1,198	1,543
Kino............ pkgs	28	13	66	65	37	17
Mastich ...... ,,	—	4	28	8	86	35
Myrrh, E.I. ,,	—	11	284	162	242	166
Olibanum ... ,,	50	168	* 1 639	2,953	1,048	1,893
Sandarac ...... ,,	155	223	461	745	859	972
Tragacanth... ,,	677	1,732	5,521	6,911	8,901	8,476
Ipecacuanha—						
Cartagena ... ,,	12	69	51	68	126	129
E.I. ("Johore") ,,	—	–	8	24	107	117
Matto Grosso ,,	12	18	75	83	84	73
Minas .... ,,	13	6	71	34	122	69
Jalap............... bls	16	—	35	73	20	54
Nux vomica ....pkgs	165	112	* 110	285	747	647
Oils—						
†Aniseed, star... cs	3	1	33	89	13	38
†Cassia............ ,,	—	3	39	40	87	66
Castor.......... pkgs	96	153	* 152	252	862	895
Coconut .... tons	198	105	461	144	928	588
Olive ...... cks, etc.	1,451	1,153	* 3,586	996	5,093	2,127
Palm ....tons	—	10	1	—	17	21
Quinine .... lb	250	2,292	223,506	201,808	42,210	25,925
Rhubarb .... chts	50	34	190	117	310	317
Sarsaparilla ..... bls	181	121	252	63	748	564
Senna.............. ,,	126	334	* 640	1,792	1,399	2.223
Shellac............. cs.	3.146	2 644	14,444	19.627	24 751	22,756
Turmeric........ tons	73	25	314	296	216	132
Wax—						
Bees' .. .. pkgs	269	677	* 1,231	1,416	2,719	3,345
Vegetable...... ,,	13	86	143	453	179	340

* Corrected.

† Stocks of essential oils at Smith's Wharf and Brewer's Quay are not included.

The exports of beeswax from Boston to the United Kingdom during 1906 amounted to 46,317 lb., valued at 2,684*l*.

The G. E. R. Co. have published their annual sixpenny "Tourist Guide to the Continent." Its features include particulars of new tours in the Harz and Thuringian mountains, the less-known valleys of the Rhine, and the popular Ardennes.

Proposed Chemists' Assistants' Union.—Sir,—Yet another attempt. Will Socialist chemists who are interested please communicate with the undersigned?—Yours, etc., Edw. S. Francis, Westminster Buildings, Wrexham.—*From the "Labour Leader."*

Correspondence

TO CORRESPONDENTS.—Please write clearly and concisely on one side of the paper only. All communications should be accompanied by the names and addresses of the writers. Publication of letters does not imply our agreement with the arguments or approval of the statements therein. If queries are submitted, each should be written on a separate piece of paper. We do not reply to queries by post, and can only answer on subjects presumably of interest to our readers generally. Letters received after the early posts on Wednesday cannot as a rule be dealt with in the current week's issue.

BUSINESS INFORMATION.—We have very full records of the makers or agents for articles and products connected with the chemical and drug trades, and supply information respecting them by post to inquirers. Inquiries regarding any articles which cannot be traced in this manner are inserted under "Information Wanted."

Disinfectants.

SIR,—Mr. H. T. C. Gardner, in his letter to your journal of July 6, appears to have misunderstood my allusion at the Dublin Congress of the Royal Sanitary Institute to the value of chemical analyses for the assay of disinfectants. I do not think anyone doubts the value of chemical analyses for ascertaining the proportion of such substances as phenol or the cresols present in a disinfectant, but even after an exhaustive chemical analysis, the calculation of germ-destroying power is more or less guesswork, because the activity of the several ingredients may be considerably enhanced or impaired not only by each other but also by the condition in which they are present in the preparation. Taking only two simple instances, both of which are, of course, familiar to Mr. Gardner, I do not know of any expeditious chemical test that will estimate ortho-, meta-, and para- cresols, each of which has a different germicidal value. Further, many insoluble substances depend upon fineness of emulsion for their germicidal efficiency, and it appears to me fallacious to calculate a disinfectant value upon the quantity present, when a portion of the substance may be almost inert. Yours truly,

Westminster, July 19. SAMUEL RIDEAL.

The Patent Medicine Trade and the Way Out.

SIR,—Your article on the recent Liverpool prosecution with regard to statements on a label of a patent medicine indicates the method by which chemists can become masters of the situation so far as unprofitable patents are concerned. The ordinary man in the street has long asked why our worthless patent medicines are not analysed and shown up, but we know the danger of a prosecution for libel if any ordinary individual did so. Obviously the work is one for the public sanitary authorities, and you have shown how it can be done under the present Acts if properly handled. Then if X, who will not secure to the chemists a profit on his pills, which he describes as a cure for diabetes, Bright's disease, and cancer, finds that the medical officer of health and the public analyst, having been ordered by the sanitary authorities to report to them, state that on analysis they were found to contain only aloes and some aromatics and could not possibly have the effects claimed, he must not grumble if the chemist had thought it part of his duty to the public to draw attention to the pills—and so on for other medicines. Just now I think it would be important if chemists could convey their appreciation of the action of Dr. Hope and the Liverpool Corporation, as the fact of the prosecution having failed may make other corporations shy of following the example unless they are encouraged.

Yours truly,

Dublin, July 21. J. C. McWALTER.

Guy's Tonic.

SIR,—As solicitor for Messrs. Boots Cash Chemists, Ltd., in the recent case brought by the Medical Officer of Health for Liverpool against them under the Sale of Food and Drugs Act in connection with their sale of Guy's Tonic, and as solicitor for the proprietors of the latter article, my attention has been called to certain paragraphs contained in your issue of July 20, under the heading "A Proprietary Article"; also "Proprietary Medicines," etc. Whatever the reasons for the withdrawal of the summons by the Medical Officer of Health at the last moment were (and I surmise that those given were not the only ones), I am instructed to state most emphatically that the proprietors of Guy's Tonic were prepared to defend the case entirely upon its merits. I think the public ought to know this, as my clients' preparation has been sold for very many years without any complaint whatever being made.

Yours obediently,

Bristol House, E.C., July 23. C. URQUHART FISHER.

Re The Word "Balsam."

The Association of Wholesale Druggists and Manufacturers of Medicinal Preparations has issued the following letter to its members:

SIRS,—You will note that in ours of May 23 last we stated that there was no probability of any interference with the "body" names or of the word "balsam" in consequence of the case of Helm *v.* Cousins, which had been recently decided at Keighley.

Since then the authorities at Somerset House have communicated with us, and Mr. Parkinson and I have had a further interview with them. The Secretary pointed out that at the time of granting the use of the body and organ names in 1903 a minute was passed by the Board disallowing the word "balsam" in connection with organ or body names or adjectival forms of such names. They considered that the meaning of the word "balsam" implied a soothing effect on the organ named. This minute had been overlooked by their officials, and consequently not acted upon. The Magisterial decision referred to having drawn their attention to the whole matter, the minute has been reaffirmed, and the Board have instructed their officers to act upon it in future. Taking the whole facts into consideration, we thought it well at the interview to submit to this decision, especially as the Board have again affirmed their intention of not interfering in any way with the use of body and organ names.

It will be possible to find a word to take the place of "balsam," and as the Board give us till the end of the year to use up old labels and get fresh ones, so that there will be no old ones outstanding at the end of the year, we think very little hardship will be involved. Yours truly,

(Signed) RICHARD C. WREN, Hon. Secretary.

60 Artillery Lane, London, E., July 19.

[The information which we had from the Board (see *C. & D.*, July 13, p. 51) mentions that "the Board will not claim duty until the present stock of labels, etc., is exhausted, or until December 31, 1907, whichever occurs first."—ED. *C. & D.*]

"Ketchup."

SIR,—Ketchup, Ketsup, Catchsup, Catsup, and Catchup are said to be from the Japanese "Kitchap," and also East India Kitjap; but that tells us but little. What does the word mean in its original tongue, whether Japanese or East Indian, and which is the correct English rendering? Perhaps it is an arbitrary word and left to our own sweet will or the printer's fancy. Can anyone help me?

SODA CARB. (134/7.)

The Patron Saint of Pharmacy.

SIR,—With reference to your recent note on this subject (*C. & D.*, June 1, p. 837), the patron saint of pharmacy generally honoured in France was St. Nicholas, or Santa Claus. The legend of miraculous oil that flowed from the tomb of the worthy bishop is too well known to need repetition—

Cujus tumba fert oleum
Matris olivæ nescium
Quod Natura non protulit
Marmor sudando parturit.

At Rouen and at Murat, however, the apothecaries belonged to the Guild of St. Cosme and St. Damien, and a description of the quaint ceremony which was performed on the feast-day of these saints in the latter town was unearthed and published by a local pharmacist of late years. St. Mary Magdalene was honoured at Lyons: her chapel, where the Apothecaries' Guild met, may still be seen, just behind the huge hospital (Hôtel Dieu). St. Mary Magdalene's connection with pharmacy is founded on the alabaster box of precious ointment which she brought to anoint the feet of the Saviour. St. Roch (usually represented as accompanied by a dog), a native of the city of Montpellier—ever a famous pharmaceutical centre—and St. Emilien, M.D. and martyr, were also occasionally chosen as patron saints by apothecaries' guilds in France. St. Luke is rarely met with.

Yours faithfully,

Paris. C. E. LORD.

Legal Queries.

See the "C. & D. Diary, 1907," for much legal information as to all trade matters. In any circumstance not covered by the articles therein, state the case explicitly with all particulars and submit to the Editor.

Infit (179/4).—We presume the exchange bargain (which you do not state very clearly) was conditional upon both parties being satisfied. As you are not, you should return the goods you have received and get back those you have sent.

Dubitas (180/60).—If you can prove that a syphon bursts owing to a defect in it, the owner of the syphon should bear the loss. It must, however, be exceedingly difficult to prove the defect, and in the event of damages arising from the burst, the owner could more easily prove that all precautions as to testing, etc., had been taken, and this would relieve him of liability.

W. F. G. (182/4).—There is no intention to restore the privilege of registration under the Dentists Act without examination. The Bill now before Parliament deals solely with companies, and proposes to reserve the rights of dental companies at present existing. As stated in our issue of July 19 it will probably not pass this session. The Amalgamated Society of Dental Operators and Mechanics comprises sixty members. The president is Mr. L. Callender, Callenders, Ltd., Sheffield. The secretary of the Society of Extractors and Adaptors of Teeth, Ltd., is Mr. F. Butterfield, 6 King Street, Oldham.

Glasgow (180/74).—The "Balsam" ruling does not affect your label, which you should have sent to us.

L. A. H. D. (181/63).—Is a licentiate of the Apothecaries' Hall of Dublin eligible for the L.P.S.I. without examination? [By Section 30 of the 1875 Act any licentiate of Apothecaries' Hall who, in order to obtain his diploma, has passed an examination in pharmacy, is exempt from prosecution for *inter alia* using the title "pharmaceutical chemist." The Council of the Pharmaceutical Society has power to deal with applications for registration from such persons.]

Spero (181/69).—You have no alternative but to pay the bank's charges. While the overdraft lasts they are entitled to charge you for every bit of work done in connection with the loan. Of course, you may take your business elsewhere and get better terms.

Miscellaneous Inquiries.

We endeavour to reply promptly and practically to trade questions of general interest, but cannot guarantee insertion of replies on a particular date, nor can we repeat information given during the past twelve months. A preliminary condition for reporting on samples submitted is that all particulars as to source and uses are given to us.

Muvo (161/59).—(1) LAUNDRY-CREAM.—The sample you send is substantially a mixture of soap, paraffin wax, paraffin, oil of citronella, and water. It is made by preparing a jelly of soap and water—½ lb. yellow soap in a quart of boiling water—and when this has cooled incorporating a mixture of (about) 1 oz. paraffin wax, 1 oz. paraffin, and 1 dr. oil of citronella. (2) METAL-POLISH.—We last gave a formula for liquid metal-polish in the *C. & D.*, February 10, 1906, p. 243. That number can still be obtained from the Publisher.

W. A. S. (162/48).—FISHING-BAIT POWDER.—This powder, which is used in small proportion for mixing with bait to make it more attractive, contains a little asafetida, fœnugreek, and powdered linseed; you will be able to judge the proportions.

Incompatible (Cape Colony) (166/37).—(1) The most complete published list of incompatibles met with in prescriptions is that given in the "Art of Dispensing." (2) The new edition of the British Pharmacopœia will not be issued for some years.

Subscriber (Pernambuco) (172/67).—The only way to free the whisky from the sea-water contamination is to redistil it. This would not be a costly matter if you have a still of 2 or 4 gals. or can get access to one, provided your local laws do not prohibit the redistillation.

Booco (165/71).—COSMETIC.—The simplest recipe for this is—

Benzoated lard	℥viij.
White wax	℥iv.
Pomade perfume	ʒss.

Melt the wax, add the lard, and stir until creamy; then add the perfume and pour into moulds.

There are other recipes in "Pharmaceutical Formulas," which you should always consult before sending inquiries.

A. E. M. (172/69).—We have frequently made the MILK OF ROSES, P.F.I., without the quick separation that you have observed. Perhaps the spermaceti has upset your batch. Leave it out, replacing with a drachm of benzoated lard, and make by the alternative process, thoroughly emulsifying with 2 oz. of rose-water, gradually added before diluting with the rest (14 oz.), then strain and add the perfume, spirit, and tincture, and finally the glycerin.

Cymo (171/52).—You can get the latest information from the College of Preceptors, Bloomsbury Square, London, W.C.

S. P. C. Co. (166/50).—SACCHARIN EQUIVALENTS.—The quantity of saccharin which equals 1 lb. of sugar in sweetness is 25 grains of "pure" saccharin or 14 grains of "refined" saccharin. This will enable you to calculate the amount of saccharin required to replace any desired quantity of sugar in the sweetened saline.

W. F. G. (169/65).—Some time ago a correspondent mentioned that a few English chemists were required in Western Australia; but some have gone out since. Vacancies such as these do not long remain open once they are known.

Ireland (181/6).—The pharmaceutical licence (Ireland) is accepted for registration in New Zealand. The condition of pharmacy in the colony is fair, but it is no more an *El Dorado* than Ireland. We could not possibly advise a married man without capital to go out there on chance, especially with his family.

Agricola (182/9).—Follow the Pharmacopœia formula, but note that the use of methylated spirit in making tr. opii is under certain circumstances illegal. As to these consult our *Diary*.

A. S. (177/21).—The non-inflammable substitute for benzine is carbon tetrachloride.

E. W. P. (169/72).—We do not know of a book exactly like what you want. You should consult the list given in the *C. & D. Diary* 1906.

Bert (180/31).—The best-known castor-oil powder is Demuth's, made under a patent process, in which the oil is combined with magnesia and gum.

*** *These correspondence pages having gone to press on Tuesday, letters received thereafter will be dealt with in subsequent issues.*

Trade-marks Applied For.

Objections to the registration of any of the undermentioned applications should be lodged with C. N. Dalton, Esq., C.B., Comptroller-General of Patents, Designs, and Trade-marks, at the Patents Office, 25 Southampton Buildings, Chancery Lane, London, W.C., within one month of the dates mentioned. The objection must be stated on Trade-marks Form No. 7, cost £1, obtainable through any money-order office.

(*From the "Trade-marks Journal," July* 3, 1907.)

"IOLA"; for food substances. By Albin Marc, 4 Rue Briconnet, Nimes, France. 291,508.

"MEDICO"; for confectionery. By the British Confectioners' Buying Syndicate, Ltd., Providence Street, Bradford. 292,618.

"CECTO"; for bird food. By Trower & Co., 442 Caledonian Road, N. 293,014.

"GREEN TREE"; for mineral waters. By Richardson & Son, 18 Andrew Street, Poplar, E. 291,922.

"VINTONA"; for mineral waters. By Camwal, Ltd., 112 Pembroke Street, Caledonian Road, London, N. 293,172.

"BALLOON"; for candles and night-lights. By De Roubaix-Oedenkoven & Co., Rue des Seigneurs, Borgerhout, Antwerp, Belgium. 293,182.

"THEE"; for perfumery. By S. Claber & Co., Ltd., 28 Canal Street, Manchester. 292,616.

"NITICIDE"; for hair preparations. By Maurice Smith, 54 Oxford Street, Kidderminster. 292,635.

"TENSO" and "TENSOINE"; for perfumery. By P. Tensfeldt, 40 Shandwick Place, Edinburgh. 292,639, 293,021.